AN INVESTIGATION INTO MOTIVATIONS OF INSTRUCTORS WHO TAUGHT BUSINESS AND TECHNICAL INTERNET-BASED COURSES AT TWO-YEAR COLLEGES

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This research was conducted to determine why two-year community college instructors teach over the Internet. By understanding why these instructors teach over the Internet, colleges can recruit more instructors to teach using the Web thus allowing colleges to offer more Internet courses. They can also use the information to keep the instructors who are currently teaching over the Internet satisfied, and motivate them to continue to teach.

To gather *this* information, a questionnaire was created and evaluated for reliability and validity during a pilot study. It was then sent to those instructors who taught over the Internet, and had their e-mails available on their campus Website. A 30.5% response rate (N=100) was achieved. The survey was divided into two sections, a demographics section and a Likert scale dealing with motivation. The Likert scale had six choices ranging from *strongly agree* to *strongly disagree* and 31 statements.

The demographic data were reported and summarized. The Likert items were examined using factor analysis techniques, and a number of components were discovered. Eight components, made up of the 31 variables from the Likert scale were found using the factor analysis. The eight components in order are labeled: Technical and Computer

Challenges, School Promotion, Student Preferences, Personal Benefits, Receiving Computerized Assistance, Growth and Knowledge, Textbook Company Assistance, and Pay.

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CHAPTER 1

THE PROBLEM

Introduction

Two-year post-secondary schools are going through a transition period regarding how their classes are conducted (Borkowski, 1996; Brown, 2001; Easterday, 1997; McGinn, 2000). The community that the college or school supports is changing, and there are ever increasing financial pressures to teach more efficiently and effectively. As technologies emerge, the nature and structure of the community college will continue to change. Community colleges now have an opportunity to transform themselves into the servants of the learning needs of the 21st century. (Paine, 1996, p. 34)

Teaching over the Internet is happening now (Berge, 1999; Borkowski, 1996; Brown, 2001; Easterday, 1997; McGinn, 2000). It is one method for reaching the changing community and providing for its many different needs. With the Internet, a two-year post-secondary school can reach its community members at literally any time and any place.

Background

Technology and the information explosion drove the world in unexpected ways. More Americans now assemble computers than cars and there are more Americans in the software industry than in the oil industry. (Paine, 1996, p. 33) Fortunately, education was

responding to it. Education is a necessity and we re increasingly turning to the information superhighway (the Net) as an interactive learning tool. It s a new paradigm, impacting our business and industry partners, government, education and world in which we live. (King, Koller and Eskow, 1996, p. 32) Because of the Internet, the world was becoming smaller and more reachable. King et al. stated the college of the future must be both a community college and a world college, developing a network to share information among contacts and partners wherever they re located. (1996, p. 32) Sawyer stated Educators who have latched onto the practice of teaching classes through the Internet are learning that this computer-facilitated methodology is promoting the effectiveness of teaching as well as the overall long-term effectiveness of student learning and retention. (1996, p.1) Students might never meet face to face, they but could still discuss, collaborate, and create group-work. The literature contained increasingly more articles about Internet- or Web-based courses offered at universities and two-year post-secondary schools. The work of educators in this decade is the work of transforming schools so that patterns of teaching and learning reflect the spirit of inquiry that is the basis for all science. (Sawyer, 1997, p. 1)

While distance learning has been around for a number of years, it has become a more important part of the educational system. It has a new definition, according to Simonson & Schlossor (1995, p.13) found in Hanson et al.(1997, p. 3):

> Distance education implies formal institutionally-based educational activities where the teacher and learner are normally separated from each other in location but not normally separated from each other in time.

To support this new definition, increasing student enrollment in distance education courses does indicate a demand for and a degree of satisfaction with course offerings delivered by distance methods (Easterday, 1997).

Internet-based distance learning is expanding rapidly, and the number of schools using it is growing by semester and quarter. In 2000, McGinn reported that

> According to researchers at InterEd, 75 percent of all U.S. universities will offer online course and 58 million students will have logged on. . . . Online courses constitute $350 million of the $240 billion education cost today, according to Merrill Lynch, but will grow to $2 billion by 2003 (p. 54)

Svetcov (2000) reports that analysts at Thomas Weisel Partners . . . estimate a $10 billion virtual higher-ed market by 2003 and an $11 billion corporate-learning market by the end of the same year. This compares to Landriault, (2000) who states that the corporate online learning market will surpass $7 billion by 2002 (p. 1).

In keeping with this goal, semester by semester, community colleges are adding more Internet-based courses. The professional literature is filled with case study after case study about Internet-based courses but there is very little actual research about why instructors are teaching using this medium (Anonymous, 2001; Brown, 2001; Johnson, 2001; Galagan, 2001; McCormick, 2000; Maher, Schooley, and Fry, 2001; & Peek,

2000). And while community colleges are not intended to bring in students from a great distance, since they exist to serve the community, they do have a great need to serve a community which is becoming more mobile and less regularly scheduled. It is just as important to serve the student who can only meet class at 2:00 a.m. as it is to serve the student who can come to class at 9:00 a.m. Internet-based courses do just that.

The first Internet-based distance learning was accomplished using e-mail. Group discussion was difficult and very confusing as one might have to wait hours or days for a respondent to get their e-mail and reply to it. While the technology, though crude, was around for many years, the newest technology will finally be able to allow almost instantaneous, interactive distance learning. With the new technology, real time consistent flow of audio and video allows a considerable amount of information to be passed synchronously as well as the other option of asynchronous learning.

Purpose of Study

The purpose of this study was to discover what motivated business and technical instructors to use Internet-based instruction within two-year colleges and institutions. Specifically, this study was designed to find the factors that actually motivated instructors to teach over the Internet. In addition, demographic statistics with respect to gender, status, teaching field, terminal degree, age, and teaching experience were gathered, to determine if these have an effect on the motivation of instructors. These demographic subgroups were tested individually by separating them into groups and running the statistics for each group as well as the entire group.

Statement of the Problem

Although there was considerable information available about what and how courses are taught over the Internet, there wass a lack of literature about the motivation of instructors teaching over the Internet. Administrators and educators could use the information about why instructors are teaching Internet courses. This information would help them make decisions about adding further online courses and attracting more instructors into teaching online and training of teachers to deliver via online.

Need for the Study

As two-year post-secondary schools move into the distance learning arena, and they find themselves teaching over the Internet, it will become more and more important to find out why instructors teach over the net. By understanding why these instructors teach over the Internet, colleges can recruit more instructors to teach over the Web. This will allow colleges to offer more Internet courses. They can also use the information to keep the instructors who are currently teaching over the Internet content, and will motivate them to continue to teach.

A second reason for this research is to determine who the Internet instructors are. There is a need to determine who the instructors are and what makes the difference (if any) in their motivations for teaching over the Internet. It is possible that there are differences in the reasons that different demographic groups teach.

In the eighties and nineties, researchers began to look at different motivation theories coming out of business. James Medved (1982) studied 70 teachers with respect to

Herzberg s motivation theories, and found that the things which were important to teachers were the things which drew them into the profession. He found that a sense of responsibility and accomplishment is very important for teachers. However, a lack of recognition (p.555) of their worth in society has had a strong negative influence on their personal sense of self-worth. Better pay and other forms of recognition were needed to increase their view of their own self-worth.

Sylvia and Hutchison performed a factor analysis on an attitudinal questionnaire answered by a group of 135 teachers. The factor analysis produced six factors which contribute to teacher motivation. The six factors were: (1) social variables and collegiate support; (2) positive supervisor relations; (3) gratification from intrinsic work elements and dissatisfaction with extrinsic elements such as pay and benefits; (4) interesting work and appropriate responsibility levels; (5) opportunities for learning and development combined with negative attitudes about day-to-day duties; and (6) job security, clear expectations and excessive workloads. To Sylvia and Hutchison, teacher motivation was composed of the freedom to try new ideas, appropriate responsibility expectations and intrinsic work elements. (p.855)

Frase, Hetzel and Grant (1982) reviewed a teacher reward system using Herzberg s motivation theory. Their interest was in the area of appropriate rewards for teacher motivation. They stated that most merit programs fail due to the basic false assumption that teachers are motivated by money. Instead, a different type of reward was used. Rewards included out-of state attendance at professional conferences, cash,

computers, and instructional materials. (1982, p. 70) At the end of their study, they found that the results were very supportive of Herzberg s theories. They found three factors were important: (1) participating teachers valued the rewards highly; (2) the rewards were perceived as special recognition for teacher excellence; and (3) participants perceived the rewards as motivation to continue their excellent teaching practices. (1982, p. 75)

In research published in 1997, Dirks interviewed instructors who were among the first to start teaching over the Internet. The data indicated that there were several benefits for instructors who teach in this manner. However, the primary reason for most of the instructors involved that fact that the instructor was teaching a technology course, and they desired to practice what they preached. They all indicated that they were willing to allow the students to use the technology. They all also liked the online discussions and the improved efficiency of communications.

In a 1997, Wolcott did a study of four-year university faculty. She found that receiving credit for distance teaching and its related activities was of paramount concern for faculty. The important question was whether distance teaching was credited and whether it carried much weight for promotion. There was considerable discussion as to whether or not distance teaching should be given more or less weight in the review process, with many faculty members asserting that it should be given more weight because of the work involved. Opposite this are chief academic officers who feel that those involved in distance teaching should receive the same weight as regular teaching. In

universities, the time distance teaching takes can take one away from other areas. Some of the neglected areas may be more important to promotion than the distance education teaching.

In a follow-up article, Linda Wolcott (1989, p. 2), finds that faculty have participated in distance education more from intrinsic than extrinsic motivation, . . . for personal reasons such as the satisfaction gained from working with a new technology, interaction with practitioners in their field, or in providing educational access to an under-served student. Herzberg s theories of work do explain that satisfaction is its own reward. Intrinsic factors have a stronger appeal than extrinsic incentives offered by the institution (p. 2).

Research Questions

1. Why do faculty design or teach their Internet-based courses?
2. Is there a set of factors that motivate instructors to teach over the Internet?
3. Is there a difference in motivation for those who design their own courses compared to those who use pre-existing software?
4. Does the distribution of these factors vary for subgroups of the population interviewed by gender, teaching field, terminal degree, age, or teaching experience?

Delimitations and Limitations

Since there was little research beyond case histories and they contain very little hard information, this research is intended to discover why instructors teach using Internet

based instruction. The case study research appears to show that this type of instruction is happening, although the reasons for it are less clear.

Delimitations.

The population chosen comes from the two-year and community colleges in the state of Texas. This provided benchmarks concerning the issues involved in implementing distance education for the communities they serve. Instructors of Internet-based business courses and technology courses which were listed in the campus Web page catalog were surveyed. Since the instructors and administrators were selected from their campus Website, it is assumed that they had as a minimum Internet and World Wide Web access.

Limitations.

Due to time and financial constraints, the researcher was not be able to have personal interviews with each instructor and administrator. Because of that lack of access, the surveys will be announced by e-mail, and the Uniform Resource Locator (URL) to the Internet survey site will be placed in each e-mail to allow transfer to the research Web site.

The Definition of Terms

Business Internet-based course: An Internet-based course in accounting, marketing, or management.

Distance education: Formal institutionally-based educational activities where the teacher and learner are normally separated from each other in location but not normally separated from each other in time. Simonson & Schlossor (1995, p.13) found in Hanson et al.(1997, p. 3).

Distance learning: Keegan (1996) defines distance learning in the United States as a global term for the use of electronic technologies in distance education.

Distributed learning: Locatis and Weisberg (1996) define distributed learning as encompassing practices where resources are geographically dispersed and where communication is less centralized.

Diffusion of Innovation: The process by which an innovation is communicated through certain channels over time among the members of a social system. (Rogers, 1995)

Internet-based course: A course taught using the Internet as the media by which information and feedback flow from instructor to student and from student to instructor.

Intranet: An internal computer network that is carefully segregated from all external computer networks, such as the Internet. (Lehnert, 1998).

Motivation: A person s will or desire to do something.

Technical Internet-based course: An Internet-based course in one of the following areas: police science, fire science, medical, office technology, or heating and air-conditioning

Two-year college: A community college, junior college, technical college, propriety school, or other institution or campus, which awards job training certifications or Associate s Degrees.

Web-based course: A course taught using the Internet as the media by which information and feedback flow from instructor to student and from student to instructor.

CHAPTER 2

OVERVIEW OF THE LITERATURE

Historical Foundation

Every child in elementary school is familiar with the story of Abraham Lincoln studying late at night, by the light of a flickering candle, to obtain his education and become a lawyer. This is a lesson for us all in that if a person wants to succeed, he or she can do so if they are willing to do the work. The lesson is usually taught and emphasizes the need to work diligently and do homework, but it is also a lesson in the effectiveness of distance education.

Learning by Correspondence

It has long been understood that people can learn independently, consequently education by correspondence has been with us for a very long time (Moore & Kearsley, 1996; Hanson, Maushak, Schlosser, Anderson, Sorenson, and Simonson, 1997). In Sweden Composition through the medium of the post (Holmberg, 1986, in: Hanson et al., 1997 p. 3) was advertised in 1833. Teaching by correspondence was first recognized in the United States in 1883, when the State of New York authorized the Chautauqua Institute to award degrees by correspondence. (Moore & Kearsley, 1996; Hanson et al., 1997) The Liberal Arts degrees offered by the Institute required correspondence courses and summer institutes.

In 1890, in eastern Pennsylvania, courses in several subjects were offered by correspondence leading to a Mine Foreman s Certificate. The students studied topics including Arithmetic in Relation to Mining, Ventilation in Theory and Practice, Modes of Working Coal, Surveying, Mechanics of Mining, the Art of Sketching, and others. Additionally, the school had courses in mining safety. In 1891, the mining school developed into the International Correspondence Schools, which is now the largest commercial home study school (Moore & Kearsley, 1996; Hanson et al., 1997). This was one of the earliest of the vocational schools to develop as well.

Throughout the late 1800s interest in education by correspondence, whether styled as a home study course or listed as a university extension, waxed and waned. In 1885, the University of Wisconsin extension offered short courses and farmers institutes. History was added later, but these programs were discontinued in 1899 due to lack of interest and funding. The University of Chicago began an extension division in 1892, but interest there also faded. During the early 1900s many correspondence courses were developed around the Unites States, delivering education and training to thousands of people who might not be able to receive education in any other manner. Other methods began to emerge. For example, electronic communication by radio became popular in the commercial world.

Education by Electronic Communication

Radio

From 1900 to 1930 a large number of universities tried radio as a medium for disseminating education. Forced to compete with commercial stations trying to attract advertising dollars, and facing a lack of interest by faculty and administration, it was an effort that was not very successful. By 1930, radio education was doomed to failure in the United States (Tilson, 1994, in Moore & Kearsley, 1996).

Television

Television has had a very good track record with respect to education. Purdue University, University of Iowa, and Kansas State College started experimenting with television in the 1930s. It was not until 1951 that university courses were offered.

Commercial broadcasters helped pioneer educational television. The National Broadcasting Company (NBC) broadcasted Johns Hopkins University s *Continental Classroom* from which a student could receive credit from a number of universities. New York University televised their *Sunrise Semester* over Columbia Broadcasting System (CBS) from 1957 to 1982. Although they did not remain involved in educational television, these companies provided a good foundation for others to continue to develop televised education.

The Ford Foundation was a major proponent of educational broadcasting. By donating millions of dollars in the 1950's and 1960s, the Ford Foundation kept television from suffering the same fate as radio (Moore & Kearsley, 1996; Hanson, 1997). Until

1967, when the Corporation for Public Broadcasting was formed, it was the major financial support for educational television, and continues to support it today.

A number of the states were involved as well. In one multi-state endeavor, the Midwest Program on Airborne Television Instruction was formed. Utilizing the resources of six states, Educational Programs were broadcast from transmitters located in six DC-6 aircraft. These aircraft flew in figure eight patterns almost continuously, and reached hundreds of disperse students. Transmissions from this program reached from Michigan to Texas. This program helped to break down the barriers between states, by breaching these barriers, future broadcasts via satellite became possible. These prior attempts gave birth to the concept of the open university method of distance teaching.

Open Universities

The first open university, established in 1962 to serve a distance clientele, was the University of South Africa. However, the British Open University (the BOU), which was established in 1969, was certainly the most successful. It became a model for many other universities around the world.

According to Moore and Kearsley (1996), there are seven general principles which open universities follow:

1. Any person can enroll, regardless of previous education.
2. Students can begin a course at any time.
3. Course study is done at a home or anywhere a student chooses.
4. Course materials are developed by a team of experts.

5. Tutoring is provided by other specialists.

6. The enterprise is national in scope.

7. The enterprise enrolls large numbers and enjoys economies of scale. (p. 42-43).

Because these are just principles, many exceptions are made. For example, some universities have lower age limits, and some courses have prerequisites. Many universities including the BOU require that students participate in residential weeks on campus.

Another characteristic of open universities is the use of audio, visual and computer media to supplement print (Moore & Kearsley, 1996). The British Open University produces its courses in association with BBC television. In spite of the extensive use of audio, video, and now computer based media, the main vehicle to disseminate information is still print media, and most open universities spend a considerable amount of resources to ensure that the print material is well designed and pedagogically sound.

This pedagogically sound learning system is often termed open learning, and has been established as one of the clear educational trends of the last decade. Open learning includes many facets, but the primary one is that the learner has control and choice over what he/she wishes to learn. One definition which touches on many other facets of open learning is found in Johnson, 1990.

> . . . an approach rather than a system of technique; it is based on the needs of individual learners, not the interests of the teacher of the institution; it gives students as much control as possible of what and when and where

> and how they learn; it commonly uses the delivery methods of distance education and the facilities of educational technology; [and] it changes the role of a teacher from a source of knowledge to a manager of learning and a facilitator. (p. 4).

There are several reasons to promote open learning. Many promote open learning to support the variety of different learning styles that different students have. (Marland, 1997). It allows learners to work toward their own goals, at their own speed, in a manner which works for them. Proponents believe that giving the student more responsibility and independence will empower students and increases the relevance, and consequently the strength of their own learning.

Another strength of open learning is from a cultural equity point of view. Organizations which promote an open structure seek to widen access to educational opportunities so that those with potential are not barred from entry for reasons such as work conditions that prevent attendance at scheduled classes; remoteness from campus; physical disability; absence of formal credentials or a nontraditional educational background.

A third area which drives the increase of the open learning concept is a technologically uneducated workforce. The trends of the late eighties and nineties in the business world, with the quality concerns and corporate downsizing caused a considerable interest in the retraining and re-education of the workforce. (Marland, 1997). Since this

training and education is going on in a continually changing environment, open learning provides a flexible and fast-paced alternative to traditional education.

> Providers of learning services had to be responsive to the specific requirements of different organizations and differences among learners in respect of when and how long they could study, styles of learning, prior learning, pacing, need for learning support, suitable venues for learning, and certification requirements. (Marland, 1997, p. 70).

Only open learning techniques would allow this learning to occur at the speed and depth required to accomplish an organization s goals. The learning techniques and the demands of employee training have given rise to several theoretical models used in distance learning.

Theoretical Background

Theoretical Models in Distance Education

Major Distance Education Theorists

Charles Wedemeyer. Charles Wedemeyer s main emphasis was the independence of the student as characterized by his preference for the term independent study. This term is most often used to describe programs at the university level. One of his major contributions is to break what he called the space-time barriers of education by separating teaching from learning. (Keegan, 1996, p .62) To do this teaching and learning must be planned separately. Wedemeyer proposed six concepts which must be wherever there is at least one student. It was immaterial whether there was a teacher there or not.

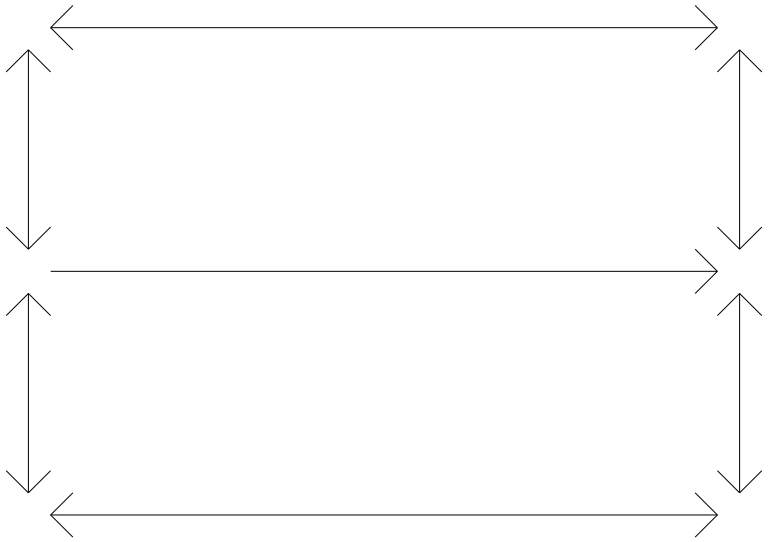
1. The student and teacher are separated.
2. The normal processes of teaching and learning are carried on in writing or through some other medium.
3. Teaching is individualized.
4. Learning takes place through the student s activity.
5. Learning is made convenient for the student in his own environment.
6. The learner takes responsibility for his progress, with freedom to start and stop at any time and to pace himself. (Keegan, 1996, p. 62; Hanson, et. al, 1997, p. 8-9).

In addition to these six ideas, Wedemeyer added these ideas. Every teacher-learner situation has four elements:

1. a teacher
2. a learner or learners
3. a communications system or mode

4. something to be taught/learned (p. 9)

These ideas can be described by a model which can be diagramed.



Michael Moore. Michael Moore created a classification method for distance education programs. He classifies distance education programs as autonomous (learner-determined) or non-autonomous (teacher-determined), and uses the following three questions to determine the degree of autonomy:

1. Is the selection of learning objectives in the program the responsibility of the learner or of the teacher (autonomy in setting objectives)?

2. Is the selection and use of resource persons, of bodies and other media, the decision of the teacher or the learner? (Autonomy in methods of study)?

3. Are the decisions about the method of evaluation and criteria to be used made by the learner? (autonomy in evaluation)? (Hanson et al., 1996, p.9-10).

In most traditional school settings, learners are very dependent on teachers. In distance education, the learner must be more responsible for what is learned and how it is learned. Some adult learners need help in formulating their learning objectives and in identifying sources of information and in measuring objectives. (Keegan, 1986, p. 74)

Desmond Keegan.

Desmond Keegan described distance education as a separation of the teaching acts in time and space from the learning acts. In order to have successful distance education the two acts, teaching and learning had to be reintegrated. This reintegration required two things. First, learning materials have to resemble interpersonal communication as much as possible, or at least have as many interpersonal characteristics as possible. Second, a number of techniques were used to actually communicate with the student. From these ideas, three hypotheses were drawn.

Distance students have a tendency to drop out in those institutions in which structures for the reintegration of the teaching acts are not satisfactorily achieved.

1. Distance students have difficulty in achieving quality of learning in those institutions in which structures of the reintegration of the teaching are not satisfactorily achieved.
2. The status of learning at a distance may be questioned in those institutions in which the reintegration of the teaching acts are not satisfactorily achieved. (Keegan, 1995, p.126).

These theories and models as a matter of course became the framework for Course Design and the concept of teacher-centered learning.

Course Design.

Instructivism. The traditional method for teaching is a teacher-centered orientation (Klemm, 1998; Roblyer, Edwards, & Havriluk, 1998). The teacher is responsible for what is learned and how it is presented. The student s responsibility is to receive the instruction. Some of this is because teachers have had a monopoly on information. (Pitt, & Clark, 1997, p. 2)

This is the predominate form of teaching today, and it works. It can be effective for a Web-based course. However, many critics claim that instructivism is an incomplete and often stifling approach to education. (Klemm, 1998, p. 508) At its worst, instructivism can lead to rigorous outcomes which must be met, and teaching the test. If nothing else, this is boring.

Boredom is only one of several drawbacks stemming from instructivism. Others are more important in terms of fully educating the student. Roblyer, Edwards, & Havriluk (1998) list three areas in which major problem arise:

1. Students cannot do problem solving.
2. Students find directed instruction activities unmotivational and irrelevant.
3. Students cannot work cooperatively. (p. 64).

These problems, especially problem solving and working together are especially important in terms of the competencies and foundation skill laid out in a report by the U.S. Department of Labor s Secretary s Commission on Achieving Necessary Skills (SCANS) as summarized in Chalofsky & Larson, (1996).

Constructivism.

Perhaps the most important aspect of an Internet-based course is the opportunity for interaction (El-Tigi & Branch, 1997; Berge , 1997; Barnard, 1997; & Chute, Sayers, & Gardner, 1997). This interaction may be synchronous or asynchronous, individual or group communications.

According to El-Tigi & Branch (1997), Learning sessions . . . should provide opportunities for the learner to:

1. interact with the teacher.
2. control the information he or she processes; and
3. give and receive feedback about the knowledge being constructed. (p. 23)

Good instructional design will provide the interaction necessary to have successful Web-based instruction. A good Web-based interface will allow the learner to communicate with the instructor, and other students, as well as provide the learner with numerous links to information resources above and beyond lecture notes (Barnard, 1997).

There are a number of instructional design methods. Gagne (1992) has derived nine "events of instruction" (p. 190), which form a solid structure to develop the interactions. When combined with his five types of learning a structure emerges.

Developing "intellectual skills" the first type of learning according to Gagne (1992, p. 12), is a building process. Lower level knowledge and skills provide a foundation for a building process into higher level skills (Roblyer, Edwards, &Havriluk, 1997).

Cognitive strategies allow learners to exercise control over their own learning process. These are the methods where students control what they remember, what and how they learn, and ultimately how they think. With practice, these are skills which can be improved with time.

One method of creating the learner/instructor interface is the use of Asynchronous Learning Networks (ALN). According to the ALN Web site (1999):

> Asynchronous Learning Networks "are people networks for anytime - anywhere learning. ALN combines self study with substantial rapid asynchronous interactivity with others. In ALN learners use computer and communications technologies to work with remote learning resources, including coaches and other learners, but without the requirement to be

online at the same time. The most common ALN communication tool is the World Wide Web.

According to Crumpacker (2001, p.8), identifying instructor-perceived incentives and obstacles is paramaount to the success of ALN.

Pedagogy

Instructional Strategies. According to Pitt, (1997, p.1) courses taught over the Internet must be comparable in quality to courses taught in the classroom. Instructors in these courses have the opportunity to expand current teaching methods by using new technologies. The effectiveness of online education depends both on increased access to resources and information as well as properly structured learning experiences.

One important aspect of online teaching is that students must be comfortable with the online environment and with computers in general. Instructors must be able to teach students basic computer and Internet skills as well as their content areas. It is important that students and instructors become proficient enough with the technological tools so that they do not become a barrier to learning.

Pitt further states that in the past, teachers have controlled the learning in classrooms by virtue of their monopoly of information. However, the Internet can now provide vast amounts of information, so the student is not longer strictly dependent the instructor for knowledge. The instructor has the opportunity to take the role as a facilitator of information, and guide students toward knowledge rather than feed it to them. To further this opportunity, using the computer and Internet allows instructors to

pay more attention to the instructional design of their courses. Many instructional strategies, already in use in the traditional classroom, are extremely well adapted to the online environment. Educators must assist learners in acquiring the skills needed to use these interactive methodologies. (Pitt, 1997, p. 12) Pitt (1997) has identified ten instructional strategies used in the traditional classroom which are exceptionally well suited to the online learning environment. Pitt s ten strategies are listed as follows:

1. Learning contract A formal agreement written by a learner which detail, what will be learned, how the learning will be accomplished, the time period involved, and the specific evaluation criteria to be used in judging the completion of the learning. (Pitt, 1997, p. 3) She continues to state that learning contracts can facilitate negotiation and clarity of learning goals and outcomes.
2. Lecture Lecture is an efficient way to impart information in a scheduled way without interruption. Notes can be placed on the Web page for the learner to review, or notes put together in a packet to be downloaded, or sent over the U. S. mail.
3. Discussion There are several modes of discussion available via telecommunications. Both bulletin boards and mailing lists (lISTSERV) are excellent tools for holding discussions and have been around for several years. The current mode of conversation for a discussion is either a chat room, or software designed to

implement discussions. WebCT, Blackboard, and Lotus Learning Space are all examples of this type of software

4. Self-directed learning Self-directed learning can include self-paced learning, independent learning, individualized learning and self-instruction. The Internet promotes this very thing by its very nature. A learner can visit libraries, museums and various institutes. One can talk to professionals, access the latest research, and read a number of electronic newspaper and scholarly journals. (Pitt).

5. Mentorship Mentors jobs are to empower students by drawing out the information that students already know and helping them to give it form. One nice aspect of mentorship online is that there is the opportunity for frequent and convenient communication between the mentor and the student. For busy educators and students, electronic communication can be a welcome, effective alternative to telephone tag, and parking problems (Pitt, 1997, p. 5).

6. Small group work Small group work can give students the chance to discuss content, share ideas and problem solve all within the confines of a small group. This discussion is usually held at a higher intellectual level than single research.

7. Projects Projects can be done on an individual basis or within a group. Independent and group projects enable online learners to

pursue special interests, to write or create for an audience, and to publish or present their finding and conclusions via the Internet. The Internet provides the additional potential of getting a wide range of feedback from experts or interested peers who can access the final product over the Internet. Collaborative learning can be considered a form of group project.

8. Case study Case study is an experiential model, which is participatory in nature. It is similar to project work in that there is a problem component which must be addressed. The case study is different in that in a case study, learners are under a time constraint, and have incomplete information. Online, case studies can be presented on Web pages, and discussed through e-mail or conference groups.

9. Forum A forum is a discussion carried out by resource people and an entire group. A forum can be run easily with online capabilities. The forum can actually be easier and more convenient to participants since travel can be eliminated.

According to Pitt, much of the power of learning via the Internet lies in its capacity to support multiple modes of communication including any combination of student-to-student, student-to-faculty, faculty-to-student, faculty-to-faculty, student-to-others, others to students and so forth. (1997, p.8) The instructional strategies used with

the Internet are the same as those used for any other learning environment, however, using this power of the Internet instructors can create meaningful and useful learning experiences.

Testing. Student evaluation is a source of concern for many instructors. Due to certain characteristics of the Internet, testing over the Web is not terribly secure. If one is using linked pages, the status line at the bottom of the screen will show the name of a linked page when the cursor passes over it. If one is not careful when choosing page names, a file named error.htm or wrong.html could appear when the cursor is rolled over the wrong answer. Any good student will certainly take advantage of that situation. (Starr, 1997).

Another problem with testing security can occur when students print the exam from over the net. This breaches test security, and the exam cannot be reused. If the student is not required to take the exam at a specific time, copies of the exam can be passed around and answers researched.

At several schools, students are required to come to campus for exams and quizzes. Others have their distance students go to regional testing sites to have their exams proctored. Another option is simply not to have exams, and grade on the quality of interactions and projects (Polyson, Saltzberg, & Godwin-Jones, 1996; Kubala, 1998; and Chute, Sayers, & Gardner, 1997).

For some instructors, assessment and exams are no trouble whatsoever. They encourage students to collaborate. By collaborating, learners can get other view points

regarding a particular subject, Thus enhancing the study groups learning. (Chute, Sayers, & Gardner, 1997, p. 79)

Teaching Requirements

Knowledge. Balch and Patino (1997) found in Polyson, Saltzberg, and Godwin-Jones (1996) list six items they found necessary to create internet training.

1. Knowledge of Internet Technology
2. Knowledge of instructional design for technology-based material
3. Knowledge of subject matter
4. Knowledge of interface design
5. Talent in graphic design
6. Development time. (p. 9).

Skills. A certain amount of technical knowledge about the World Wide Web is required to create effective Web based learning (Starr, 1996). First, an instructor must understand what a Web address or URL is, and how one works. Instructors must also have a working a understanding of HTML or Hypertext Markup Language, and be prepared to program Web documents. Understanding a common gateway interface (CGI) is also necessary if the instructor wants to do more with the class Web site than have the student read pages of text. It would be useful to know Java scripting, which is a programming language useful in Web page design. The instructor must understand transmission access speeds in order to determine which file sizes are acceptable.

Motivation is one of the essential elements of successful interaction with the professor and the student, more especially true in an environment of Internet interaction. Internet interaction must be combined with motivation of the student to receive the material and to understand the benefits of learning. The various theories of motivation applying to the student, instructor and job are discussed.

Motivation

Motivation Theory

Needs Hierarchy Theory

The first of the motivational theorists in this review was Abraham Maslow. His hierarchy of needs theory is taught in multiple areas including business, education, psychology, and several other disciplines. His theory essentially lists five levels of needs a human being requires. In this hierarchy, the bottom level, physiological needs contains the basic needs, which include areas like food, water, sleep, clothing and shelter. Without these things, a person cannot hope to even begin to be concerned about other higher order needs.

The safety or social needs are on his second level from the bottom. These include protection from danger and an uncertain future. A third level includes belonging needs. People are social, and need the companionship of other people. People need to have a place in a social group.

The next level up is the need for esteem. Esteem needs include the need for self-respect and self-confidence, as well as for a good reputation, prestige and recognition. Maslow lists his highest level of need as self-actualizing needs. This is the need to be the best one can possibly be. At this level, a person can make full use of all the skills and talents that are available within the person.

Later, Maslow organized his hierarchy into two categories, one which includes the bottom three levels, physiological needs, safety needs, and belonging needs, grouped together and identified as deficiency needs. The top two groups, esteem and self-actualization needs are classified as growth motivated or development needs. (Duncan, W. J. (1989).

Motivation/Hygiene Theory

Frederick Herzberg was another major researcher in the area of motivation, and one of the most well known. His theory claimed that there were certain factors which, if added, increased job satisfaction. These factors were called motivators. (Duncan, W. J. (1989).

Other factors existed which could not increase job satisfaction, but if these factors were not present, job satisfaction would decrease. Herzberg named these factors hygiene factors. Hygiene factors include supervision, interpersonal relationships, physical working conditions, salaries, company policies and administrative practices, benefits and job security. If these factors were fulfilled, employees would not be dissatisfied, but still would not be motivated. These hygiene factors must be fulfilled as a starting point however.

(Duncan, W. J. (1989), Herzberg, F., Mausner, B., & Snyderman, B. B. (1959), & Wren, D. A. (1987)).

For job satisfaction, the motivating factors must be present. Included in these were achievement, recognition for accomplishment, challenging work, increased job responsibility, and opportunities for growth and development.(Duncan, W. J. (1989), Herzberg, F., Mausner, B., & Snyderman, B. B. (1959), & Wren, D. A. (1987)).

Expectancy Theory

Expectancy theory was a theory introduced by Victor Vroom in 1964, in his book Methods of Organizational Research. In this book, Vroom defined several terms. The first was expectancy. (p.17) According to Vroom, expectancy was a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome. A second term is valence (p.17) which was the attractiveness or perceived value attached to the particular outcome by the individual. A third term which Vroom uses is instrumentality. Instrumentality is how much the reward effects the employee, or how positively the results of the reward effect the employee. Pecotich and Churchill summarize Vroom s theory as follows:

> [A] person s motivation to expend effort on any task depends upon: (1) expectancy the person s perception of the probability that experiencing a given amount of effort on that task will lead to improved performance; (2) instrumentality the person s perception of the relationship between improved performance and the receipt of certain outcomes such as more

pay, a promotion, and so on; and (3) valence the person s perception of the desirability of receiving the outcomes or rewards. (p. 214).

In other words, people make choices based on what they anticipate will happen. Consequently, rewards must be closely tied to the behaviors which the organization deems important.

Job Characteristics Model (JCM)

Hackman and Oldham. In 1976, J. Richard Hackman and Greg R. Oldham published their research on the Job Characteristics Model. The model describes the relationships between job characteristics and individual responses to work. Essentially, the model provides five core (p.225) job dimensions and three psychological states. The links between the job dimensions, psychological states, and several outcomes or results provide beneficial personal and work outcomes.

The three psychological states are; (1) experienced meaningfulness of the work, (2) experienced responsibility for the outcomes of the work, and (3) knowledge of the results of work activities. (p.255) The model says That an individual receives a positive affect to the extent that he learns . . . that he personally . . . has performed well on a task that he cares about. (p. 255-256) This positive affect reinforces and motivates the employee.

The five job characteristics include; (1) job variety, (2) task, (3) task significance, (4) autonomy, and (5) feedback. Of these characteristics the first three contribute to the first psychological state, experiencing meaningfulness of the work. The amount of

autonomy a worker has effects how he perceives his/her experienced responsibility. Feedback provides knowledge of the results of the employees work.

The outcomes, or results, comprised the third area of the model. These outcomes are also matched with the psychological states. When an employee experiences meaningfulness in work, he is more likely to achieve a high level of work motivation. Experiencing responsibility for the outcomes of their work can provide a high quality of work performance. An employee s knowledge of the results of his work activities will supply a high level of satisfaction with work, a low absenteeism rate, and low turnover.

Other Motivational Areas

In 1994, Robert Knoop explored stress and its relation to Herzberg s theory. He found that the values Herzberg called motivators and satisficers were connected. In this study, four work values emerged as meaningful predictors for the three dimensions of stress investigated: esteem from others, achievement through work, meaningful work, and the use of one s abilities and knowledge. (p.835).

Faculty Motivation

K-12

The motivation of teachers has been studied since the early seventies. In 1972, Belasco and Alutto defined satisfaction as a willingness to remain within the current school organization despite inducement to leave. (p. 44) They reported that the

decisional climate, or the liberty of the teacher to make a decision, was a strong factor influencing whether a teacher remained employed or moved to a different position.

In the eighties and nineties, the study of teacher motivation continued, and began to look at different motivation theories coming out of business. James Medved (1982) studied 70 teachers with the respect to Herzberg s motivation theories, and found that the things which were important to teachers were the things which drew them into the profession. For teachers, a sense of responsibility and accomplishment are very important to them. However, a lack of recognition (p.555) of their worth in society has had a strong negative influence on their sense of worth. Better pay and other forms of recognition were needed to increase their worth.

In research conducted in 1985, Sylvia and Hutchison were interested in whether merit pay was productive in motivating teachers. To do this, they performed a factor analysis on an attitudinal questionnaire answered by a group of 135 teachers. The factor analysis produced six factors which contribute to teacher motivation. The six factors were: (1) social variables and collegiate support, (2) positive supervisor relations; (3) gratification from intrinsic work elements and dissatisfaction with extrinsic elements such as pay and benefits; (4) interesting work and appropriate responsibility levels; (5) opportunities for learning and development combined with negative attitudes about day-to-day duties; and (6) job security, clear expectations and excessive workloads.

To Sylvia and Hutchison, teacher motivation was composed of the freedom to try new ideas, appropriate responsibility expectations and intrinsic work elements (p.855).

They stated that trying to implement a merit pay system would actually work against motivating teachers. By trying to standardize evaluation criteria, which would be necessary for fairness, the autonomy, control, and freedom of teachers to do the job would be sacrificed, leading to unmotivated teachers.

In a document published in 1998, Wright and Custer explored the issue of what makes an outstanding technology teacher. They create an instrument to measure teachers perceptions of aspects of their jobs which they considered enjoyable, as well as those areas which they felt could be improved. The researchers found that there were two enjoyable themes which emerged. These themes had to do with excitement and stimulation of learning and working with new technologies(20.5 %), (p.65) and the enjoyment of working with kids and making meaningful difference in their lives.(14.8 %) (p. 66) As far as things which needed to be changed, the teachers cited frustration in the lack of funding for equipment supplies, and facilities.(19.5%) (p.67). In addition, the technology teachers cited the perceived decline in personal characteristics and attitudes of students (13.3 %).

Frase, Hetzel and Grant reviewed a teacher reward system using Herzberg s motivation theory. Their interest was in the area of appropriate rewards for teacher motivation. They stated that most merit programs fail due to the basic false assumption that teachers are motivated by money. Instead, a different type of reward was used. Rewards included out-of state attendance at professional conferences, cash, computers, and instructional materials (p. 70). At the end of their study, they found that the results were very supportive of Herzberg s theories. They found three factors were important: (1)

participating teachers valued the rewards highly; (2) the rewards were perceived as special recognition for teacher excellence; and (3) participants perceived the rewards as motivation to continue their excellent teaching practices.(p. 75).

Post-secondary

In community colleges and universities the differences are slight. In a 1992 review of the literature, Dillon and Walsh found that the ingredient most neglected in the diffusion of distance education is leadership, the foundation of change. (p. 17) The article continues and expresses that most of the time, training is the only support provided, which does not work. Training is only effective if there is adequate leadership in support of the change (Lee, 2001, p. 60).

Receiving credit for distance teaching and its related activities is of paramount concern for faculty(Texas Higher Education Coordinating Board, 2000, p. 6). The important question is whether distance teaching is credited and whether there is much weight for promotion. There is considerable discussion, whether distance teaching should be given more or less weight in the review process, with many faculty members asserting that it should be given more weight because of the work involved. Opposite this are chief academic officers who feel that those involved in distance teaching should receive at least the same weight as regular teaching.

However, according to a 1997 study (Wolcott, 1997), in universities, the time distance teaching takes can take one away from other areas which may be more important to promotion. In this study she reaches several conclusions:

1. Distance education occupies a marginal status.
2. Distance teaching is neither highly valued or well rewarded as a scholarly activity.
3. Distance teaching is not highly related to promotion and tenure decisions.
4. Rewards for distance teaching are dependent on the academic unit s commitment to distance education.

Studies by Ellis (2000) and Li (2002) support these conclusions. Fortunately, many involved with distance teaching feel that higher education will have to change how we handle information dissemination.

In a follow-up article, Linda Wolcott (1989, p. 2), finds that faculty have participated in distance education more from intrinsic than extrinsic motivation, ...for personal reasons such as the satisfaction gained from working with a new technology, interaction with practitioners in their field, or in providing educational access to an under-served student. Herzberg s theories of work do explain that satisfaction is its own reward. Intrinsic factors have a stronger appeal than extrinsic incentives offered by the institution. (p.2) This research is echoed by research by Schifter, (2000) and Bowman (2001). Shea, Motiwalla and Lewis s research (2001, p.116) also noted that income did not seem to be the motivating factor.

Motivation for Technical Change

Diffusion of Innovation

Several other terms are currently being used for diffusion. Searching the literature will bring the additional terms of adoption, implementation, routinization and utilization. Campbell (1996) chose to use the term implementation because it must fully embraces the transformation of computing technologies from merely boxes of equipment to a taken-for granted aspect of the planning environment. (p.2) She outlines three perspectives on implementation. The first is technological determinism. Technological determinism views technologies as simply items of equipment. The likelihood of being used depends most on the quality of the technology and on whether the members of the organization recognize its merits. The technical advantages should be so obvious that they will rapidly embrace it.

Managerial rationalism, the third theory, does not view the introduction into an organization as a totally technological process. The human element is involved with this perspective. It is considered that managers can predict and control the behavior of employees through rational management techniques. According to the theory of managerial rationalism, effective implementation can be achieved using good management techniques and technical competence. The key difference between technological determinism and managerial rationalism is that the latter acknowledges that new technologies . . . must be managed and controlled to yield their full potential. (p.5)

The third theory is social interaction, which involves how individual organizations actually work rather than how they ought to work. The key assumption of the social interaction perspective is that technology does not function independently of its environment. It requires employees to accept and use the technology within their

particular culture and organizational environment. That is why it is possible for an excellent technical system to sit unused, or used in a way totally unplanned by managers.

Faculty Motivations for Innovation.

In research published in 1997, Dirks interviewed instructors who were among the first to start teaching over the Internet. The data indicated that there were several benefits, but the primary motive for most of the instructors involved that fact that the instructor was teaching a technology course, and they desired to practice what they preached. They all indicated that they were willing to allow the students to use the technology. They all also liked the online discussions and the improved efficiency of communications.

With distance education, an entire organizational change is necessary. Dillon and Walsh agree that the focus of distance education needs to transfer from educators to learners. The terrorist attacks of September 11 have already begun to change the way training is being looked at in the corporate world. Interest in e-learning as an alternative to classroom-based programs requiring travel has increased dramatically. This is especially true of live-learning with its ability to bring dispersed groups together for real-time sessions. (Author not available, 2001 October 3, p.1) With a tightened economy, many corporations are not going to want to spend the money for creating their own training, and are more likely purchase a less expensive preexisting package. The world changed September 11, 2001. Internet based distance education will continue to change with it (Caudron, 2002).

CHAPTER 3

METHODOLOGY

Introduction

By understanding why instructors teach over the Internet, colleges can recruit more instructors to teach using the Web thus allowing colleges to offer more Internet courses. They can also use the information to keep the instructors who are currently teaching over the Internet satisfied, and motivate them to continue to teach. To gather this information, a questionnaire was created and evaluated for reliability and validity during a pilot study. It was then sent to those instructors who taught over the Internet, and had their e-mails available on their campus Web site.

Research Design

A survey was created to measure the motivation of instructors. After brainstorming and discussions with professors, instructors, distance education coordinators, students, and others, a list was drawn up of possible reasons an instructor might want to teach over the Internet. Once the original list was completed, the items were placed together in subcategories, based on the how the topics were related to each other. The five subcategories were Personal Growth, Teaching Support, Professional Growth College Factors, and Student Support. The topics and their related subcategories are in Appendix D. After all items were placed into the appropriate subcategories, items

were combined, and a few ideas were dropped completely. The final questionnaire contains 31 statements which each had six choices ranging from *strongly agree* to *strongly disagree*. One comment block and an additional 14 general demographic questions were then added.

Population

The target population of this research was instructors at two-year junior and community colleges, as well as technical schools, who delivered Internet-based courses, with this research study specifically targeting business and industrial/technical programs. This study was limited to two-year post-secondary schools in Texas.

In Texas, there were 54 colleges listed on the University of Texas Community two-year college Web page (http:// www.utexas.edu/world/comcol/state/). Some of these schools were divided into multiple campuses which have individual Web pages. When the separate campuses were added, the list included 75 schools which have a Web page and were reviewed for Internet courses. A total of 328 instructors were in the population.

Sample

The sample measured included all 328 instructors teaching business or industrial skills courses as identified by the institution s schedule of classes or by specific Internet course Web pages. Since the instructors were selected from their campus Web sites, it is assumed that they will have as a minimum e-mail and World Wide Web access.

For minimum sample size, the general rule of thumb suggested by Seymour Sudman (1976) in Gall, Borg, and Gall (1996) was used. When doing survey research,

100 subjects was the minimum for major groups and 20 to 50 in each minor subgroup was the size recommended.

Pilot Study

A pilot study was run to test for validity and reliability of the instrument and to test the Web site to insure that it functioned technically. The first round of the study consisted of seven instructors who were interviewed, and their suggestions were incorporated into the questionnaire. Instructor comments were noted, and suggestions were incorporated into the survey instrument. The second round included three more instructors who reviewed that instrument and their comments were also included in the final product.

Instructors from seven of the community colleges listed at the Web site were tested in the third round of pilot testing. This was 10% of the colleges in the group. The seven community colleges were chosen using systematic sampling. A number was drawn from a cup and that number was counted down from the top of the list. Counting down from that college, every tenth college was selected to get approximately 10% of the colleges. In addition, the 10 instructors at the North Central Texas College and Vernon College who were interviewed for validity also filled out the completed survey instrument in paper form. These questionnaires were added to the group contacted by e-mail.

Instrumentation

A questionnaire was constructed, which contained 14 demographic questions, a Likert scale with 31 statements, each of which had a choice of six possible answers

ranging from *strongly agree* to *strongly disagree*, and a comments box. A set of check boxes or radio buttons were available with each question. Check boxes are used when a respondent is allowed more than one answer, and radio buttons are used to limit the respondent to only one choice.

Reliability

Reliability was tested using Cronbach s alpha ( ), which is a specialized form of the Kuder-Richardson Formula 20 (Isaac & Michael, 1995). This reliability measure was based on the consistency of responses to all items in the test, called the inter-item consistency. This inter-item consistency contains two sources of error variance: (1) content sampling (as in alternate-form and split-half reliability); and (2) heterogeneity of the domain sampled. (Anastasi, 1988, p. 122) The questionnaire developed for this research has multiple-scored items. For these item types a test called either coefficient alpha ( ) or Cronbach s alpha ( ) was developed. Specifically, alpha is a lower bound for the true reliability of the survey (SPSS, 1999, p. 362). The formula for Cronbach s alpha ( ) follows:

If it is assumed that all variances are equal, the ratio simplifies to the average inter-item correlation, the Standardized item alpha.

Reliability was measured during the testing stage using the 10 instructors at the North Central Texas College and Vernon College who were interviewed for validity. In addition, instructors from seven of the community colleges were sent e-mails with the Web site address and asked to respond to the survey. The seven community colleges were chosen using systematic sampling. A number was drawn from a cup and that number was counted down from the top of the list. From that college, every tenth college was selected to get approximately 10% of the colleges. A total of 28 questionnaires were used to test reliability. The results were loaded into SPSS for Windows Release 10.0.1 (27 October 1999) and Cronbach s alpha computed. The alpha coefficient computed was .9028, and the standardized item alpha is .9170. This is an estimate for the true alpha which is the lower bound for the true reliability. A reliability of .70 is acceptable.

Validity

Since this survey was created to attempt to determine what the real factors are, face validity was used and ten instructors at two colleges were asked to review the survey instrument. The surveys were reviewed for visual errors, for example: spelling, layout and question spacing. In addition, the reviewers were asked about the clarity and understandability of the statements themselves.

Seven instructors at Vernon College and North Central Texas College were interviewed, and their suggestions were incorporated into the questionnaire. Instructor comments were noted, and suggestions incorporated into the survey instrument. A *not applicable* choice was added to the six possible answers to each statement. Three

instructors at North Central Texas College reviewed that instrument and their comments were also included in the final product.

Data Collection Procedures

An e-mail, with the appropriate survey Web address set up as an active link, was sent to all instructors listed on the college web site (See Appendix C). The recipients simply clicked the link, and were transferred directly to the questionnaire web site from which the data was collected (See Appendix D). The respondent filled out the survey online, which took about 10 minutes. At the conclusion the respondent only needed to click the submit button to send the survey to the researcher. If the e-mail link did not function properly, a URL to copy and paste into the web browser was available in the e-mail. Using the Internet will reduce or eliminate many reasons for low response rates. See Appendix C.

Data Analysis Procedures

Descriptive statistics were used on fourteen demographic questions and a factor analysis was used on the results from the Likert scale instrument. The responses were loaded into SPSS, and the results were tabulated. The new factors were identified first using a Pearson correlation matrix. The components were then rotated using the Varimax method of rotation, and a component transformation matrix is created.

Filtering, using the build in filters in SPSS was used to check for relations and differences between subgroups. Gender, teaching field, terminal degree, age, and teaching experience were the demographic fields which were filtered. Each filtered subgroup then

had the factor analysis rerun on that subgroup using the same procedures as those used on the whole group. The resulting factors were then compared with factors from the entire group.

Summary

A survey was created to measure the motivation of instructors. It was tested for reliability and validity, and provided to instructors in the target population. The results of this survey are discussed in Chapters 4 and 5.

CHAPTER 4

FINDINGS

Introduction

The primary reason for this research was to determine what motivated business and technical instructors to use Internet-based instruction within two-year colleges and institutions. To do this, a pilot study was conducted to test for reliability and validity. Twenty eight responses were received. The study instrument had a preliminary alpha of .9028. As a result of the pilot study, a question was added about the percentage of the course content required to be taught over the Internet. In addition, a statement concerning motivation about pay and tenure was split into two statements, with pay and tenure listed separately.

After completion of the pilot study, and after all mandatory changes were made, a survey was sent to instructors at community colleges in Texas who teach Internet courses. One hundred instructors responded to the questionnaire. When the responses were received, Cronbach s alpha was run to determine the final reliability of the data received. The definitive alpha was .9093, greater than the .7 required for the test to be considered reliable.

The method for determining the reasons for teaching Internet-based courses was to run a factor analysis on the 31 Likert scale items in the questionnaire. The data were

subjected to the factor analysis and eight factors were found. These eight factors accounted for 75.62% of the explained variance.

In response to the third research question, to determine whether there was a difference between the group of subjects who designed their own web sites and course content, and the group who used pre-existing software, filters were used to separate the two groups and factor analysis was used on each group. The factors determined by each group were then reported.

Finally, filters were used to separate other subgroups within the whole sample. Gender, teaching field, terminal degree, age, and teaching experience were the demographic fields which were tested. Each filtered subgroup had the factor analysis rerun on that subgroup using the same procedures as those used on the whole group. The resulting factors were then compared with factors from the entire group.

Demographics

Age

Of the population of 328, 100 responses were received, which equated to a response rate of 30.5%. Of the respondents, 40 were male and 60 were female. The responders ranged in age from those in the 25 to 29 bracket to those in the 55 plus bracket. The actual age data of the respondents are displayed in Table 1.

Education

The sample was highly weighted toward subjects with a master s degree. There were 19 subjects who reported earning a bachelors degree and 18 who reported earning a doctorate. The remaining 63 members of the sample reported having earned master s degrees.

Table 1

Age of Sample by Group

Age	Percent	Number
21-24	0.0	0
25-29	1.0	1
30-34	2.0	2
35-39	8.0	8
40-44	16.0	16
45-49	23.0	23
50-54	24.0	24
55 +	26.0	26

Teaching Experience

The instructors and professors teaching experience ranged in experience from being in their first year to having taught for 35 years. The mean was 14.45 years, with a standard deviation of 8.24, and a variance of 60.91.

Full Time Versus Part Time

Most of the responding faculty members taught full time. Eighty-three of the 100 members surveyed reported working as full time faculty. Seventeen faculty members worked part time.

Computer Usage

One subject reported using a computer only once per week. The other 99 respondents used a computer daily. One subject responded that he never used e-mail, while the other 99 use e-mail on a daily basis. The subject who reported using the computer once a week was different from the one did not use e-mail. Of the 100 who answered to the survey, 99 of them use the Internet daily, one used the Internet once per week. Only two members of the sample, reported that they did not own a computer.

Computer Training

Of the 100 respondents, 76 reported receiving some computer training, while the other 24 received no training. From the various ways that an instructor might receive training, subjects were asked to indicate, from a list of several possible sources, how they received their training. The respondents were allowed to choose multiple training methods. Sixty instructors received training from a seminar, and three received training from a computer store. Sixty-six of those who responded received training from a college and thirty-four received some training from a summer course or institute. Finally, 22 received training from some other source. The other methods included those who taught themselves (10), and military training or other work related type of training. A few received professional end-user training from IBM or another computer company and two

reported receiving on-line training themselves. The other sources were varied and can be found in Appendix A.

Designing the Course

Of the total 100 instructors who answered the questionnaire 70 instructors, designed their own course content, using various platforms. Thirty instructors reported that they used some other source for their courses such as pre-existing material. The actual list of sources is included in Appendix B.

Percentage of Course Content on the Internet

Seventy four instructors thought that 75%-100% of the course content should be posted on the web to be considered an Internet based course. Fifteen of those who answered the survey believed that 50%-75% of the course should be on the site, while six instructors believed that 25%-50% should be on the site. The final five instructors reported that if as little as 25% or less of the course content were on the Web site it should be considered an Internet course.

Motivating Factors

In order to answer the first two research questions, a factor analysis was run on the 31 variables listed as Likert scale items on the questionnaire. The initial factor analysis investigated all 100 of the responses. The overall reliability was .9093 as measured by Cronbach s Alpha. The resulting factors accounted for 75.62% of the explained variance. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.583, which was significant. In addition, Bartlett s test of Sphericity was run, which provided an

approximation of Chi Square. The score returned was 0.000, with 465 degrees of freedom, so this test was also significant. The factor analysis produced eight components. The Rotated Component Matrix showing the components and loadings for the factor analysis is in Table 2.

Six variables were located in component one: challenge of learning and using new technology (TECHCHAL), loving computers (LOVECOMP), gaining more knowledge of technology (KNOWTECH), learning more knowledge of a particular subject (KNOWSUB), keeping computer/Internet skills current (CUR_SKIL), and working on the instructors own time and in their own space (OWNTIME). It accounted for 14.34% of the explained variance.

Component two contained six variables: college recruitment and retaining students (COL_RCRT), competitive advantage or improving the image of the school (COM_ADVG), college survival (COL_SURV), the constantly changing nature of the job (CHNG_JOB), reaching students (RCH_STNT), and students like it (STNTLIKE). It accounted for 12.96% of the variance explained.

Seven variables were found in component three: instructors can communicate with their students more easily (COMMSTNT), many students are more at ease with a

Table 2

Rotated Component Matrix-All Subjects [a]

Component

	1	2	3	4	5	6	7	8
TECHCHAL	0.871							
LOVECOMP	0.834							
KNOWTECH	0.824							
KNOWSUB	0.785							
CUR_SKIL	0.746							
OWN_TIME	0.444							
COL_RCRT		0.877						
COM_ADVG		0.862						
COL_SURV		0.804						
CHNG_JOB		0.666	0.413					
RCH_STNT		0.660				-0.457		
COMMSTNT			0.785					
STNTCOMP			0.744					
STNTLIKE		0.404	0.734					
EASYSTNT			0.707					
STNFACE			0.554			0.428		
OTR_INST				0.757				
BETR_TCH				0.746				
RESEARCH				0.696				
SCL_MONY				0.639				
TENURE				0.597				
SAVETIME			0.431	0.493				
BOOKPART					0.809			
GRADELEC					0.751			
BOOKSITE					0.704			
ONLIN_RC					0.681			
SUPVISOR						0.779		
INTHING						0.581		
FREE_ISP							0.844	
TECHPASS							0.549	
PAY							0.790	

[a] Rotation converged in 12 iterations.

computer than an instructor (STNTCOMP), students like it (STNTLIKE). More of the seven include: its easy for students to use (EASYSTNT), instructors do not need to meet with my students face to face as often (STNFACE), Internet teaching will save time

(SAVETIME), and the constantly changing nature of the job (CHNG_JOB). Component three accounted for 11.23% of the variance explained.

The alpha for component four was .8372. Six variables exist in component four: other instructors are doing it (OTR_INST), better teaching assignments (BETR_TCH), research material for publications (RESEARCH), saving the school money (SCL_MONY), tenure (TENURE), and Internet teaching will save time (SAVETIME). Component four accounted for 11.23% of the explained variance.

Component five had an alpha of 0.7338 and four variables. The variables are: textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), grade assignments submitted electronically (GRADELEC), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), and on-line grading and record keeping (ONLIN_RC). This component accounted for 9.49% of the explained variance.

Component six was made up of four variables: my supervisor requested or ordered me to do it (SUPVISOR), distance learning/education is the in thing (INTHING), the inverse of reaching students (RCH_STNT), and instructors do not need to meet with students face to face as often (STNFACE). This component did account for 6.61% of the explained variance.

Two variables were found in component seven: free or low-cost personal Internet Service (FREE_ ISP) and afraid technology will pass me by (TECHPASS). It accounted for 5.66% of the variance explained.

Component eight had only one variable in it. The one variable was pay (PAY). This component accounted for 4.56% of the variance explained.

Course Design

Designing Their Own

In order to answer the third research question, the subjects were asked whether they designed their own courses. Out of the 100 respondents, 70 instructors designed their own course content and delivery platform. Table 3 contains the Rotated Component Matrix showing the components and loadings for its factor analysis. The combined components accounted for 75.45% of the explained variance.

Seven variables were located in component one: challenge of learning and using new technology (TECHCHAL), loving computers (LOVECOMP), keeping computer/Internet skills current (CUR_SKIL), gaining more knowledge of technology (KNOWTECH), learning more knowledge of a particular subject (KNOWSUB), working on the instructors own time and in their own space (OWNTIME), and afraid technology

Table 3

Rotated Component Matrix-Instructors Designed Their Own Course Content [a, b]

	Component							
	1	2	3	4	5	6	7	8
TECHCHAL	0.858							
LOVECOMP	0.852							
CUR_SKIL	0.807							
KNOWTECH	0.777							
KNOWSUB	0.765							
OWN_TIME	0.553							
COM_ADVG		0.874						
COL_RCRT		0.866						
COL_SURV		0.819						
STNTLIKE			0.870					
COMMSTNT			0.839					
EASYSTNT			0.722					
STNTCOMP			0.533		0.505			
RCH_STNT		0.529	0.53					
OTR_INST				0.788				
TENURE				0.728				
BETR_TCH				0.663				
RESEARCH				0.612		0.526		
SCL_MONY				0.597				
SUPVISOR					0.867			
INTHING					0.668			
FREE_ISP					0.658			
STNFACE					0.583			
TECHPASS	0.56				0.564			
PAY					0.741			
BOOKPART						0.715		
BOOKSITE						0.584		
ONLIN_RC						0.543	0.498	
GRADELEC							0.703	
SAVETIME				0.504			0.513	
CHNG_JOB		0.448	0.465				-0.508	

[a] Rotation converged in 10 iterations.

[b] Only cases for which Design Own = y are used in the analysis phase.

will pass me by (TECHPASS). This component accounted for 15.88% of the explained variance.

The second component consisted of five variables: competitive advantage or improving the image of the school (COM_ADVG), college recruitment and retaining students (COL_RCRT), college survival (COL_SURV), reaching students (RCH_STNT), and part of the constantly changing nature of the job (CHNG_JOB). It accounted for 11.79% of the variance explained.

There were six variables in component three including: students like it (STNTLIKE), instructors can communicate with their students more easily (COMMSTNT), and it is easy for students to use (EASYSTNT). The rest of the variables include: many students are more at ease with a computer than an instructor (STNTCOMP), reaching students (RCH_STNT), part of the constantly changing nature of the job (CHNG_JOB), and component three accounted for 11.69% of the variance explained.

Component four had six variables: other instructors are doing it (OTR_INST), tenure (TENURE), better teaching assignments (BETR_TCH), research material for publications (RESEARCH), saving the school money (SCL_MONY), and Internet teaching will save time (SAVETIME). Component four accounted for 11.04% of the variance explained.

Six variables made up component five. This component included: supervisor requested or ordered me to do it (SUPVISOR), distance learning/education is the in

thing (INTHING), a free or low-cost personal Internet Service (FREE_ ISP), instructors do not need to meet with students face to face as often (STNFACE), instructors are afraid technology will pass them by (TECHPASS), and many students are more at ease with a computer than an instructor (STNTCOMP). Component five accounted for 10.01% of the variance explained.

Five variables made up component six. They are: pay (PAY), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), on-line grading and record keeping (ONLIN_RC), and research material for publications (RESEARCH). It accounted for 8.57% of the explained variance.

Component seven had four components: on-line grading and record keeping (ONLIN_RC), grade assignments submitted electronically (GRADELEC), Internet teaching will save time (SAVETIME), and (CHNG_JOB) which is part of the constantly changing nature of the job. It accounted for 6.46% of the variance explained.

Pre-Existing Software

To continue looking at the differences between those instructors who did and did not create their own course content a factor analysis was performed on the data from the instructors who did not design their own courses, but instead used preexisting software. Of the 100 respondents who answered the questionnaire thirty instructors did not design their own courses. The Rotated Component Matrix is displayed in Table 4, showing the

components and loadings for its factor analysis. Its overall alpha was .8907, and the variables accounted for 92.32% of the explained variance.

Thirteen variables were located in component one: competitive advantage or improving the image of the school (COM_ADVG), distance learning/education is the in thing (INTHING), college recruitment and retaining students (COL_RCRT), college survival (COL_SURV), part of the constantly changing nature of the job (CHNG_JOB), students like it (STNTLIKE), and instructors do not need to meet with students face to face as often (STNFACE). Component one continues with: reaching students (RCH_STNT), keeping computer/Internet skills current (CUR_SKIL), easy for students to use (EASYSTNT), on-line grading and record keeping (ONLIN_RC), many students are more at ease with a computer than an instructor (STNTCOMP), and saving the school money (SCL_MONY). All these variable accounted for 29.94% of the explained variance.

Eight variables were found in component two: gaining more knowledge of technology (KNOWTECH), learning more knowledge more knowledge of a particular subject (KNOWSUB), challenge of learning and using new technology (TECHCHAL), the inverse of pay (PAY), loving computers (LOVECOMP), Internet teaching will save time (SAVETIME), keeping computer/Internet skills current (CUR_SKIL), the inverse of

Table 4

Rotated Component Matrix-Instructors Did Not Design Their Own Course Content [a, b]

	Component						
	1	2	3	4	5	6	7

COM_ADVG	0.934						
INTHING	0.911						
COL_RCRT	0.911						
COL_SURV	0.893						
CHNG_JOB	0.866						
STNTLIKE	0.824						
STNFACE	0.818						
RCH_STNT	0.802						
CUR_SKIL	0.771	0.490					
EASYSTNT	0.761						0.463
ONLIN_RC	0.722			0.536			
STNTCOMP	0.688		0.562				
KNOWTECH		0.934					
KNOWSUB		0.921					
TECHCHAL		0.895					
PAY	-0.774						
LOVECOMP		0.716		0.465			
SAVETIME		0.646					
FREE_ISP			-0.876				
OWN_TIME			0.822				
BETR_TCH			0.763				
RESEARCH			0.673		0.532		
GRADELEC				0.924			
BOOKPART				0.679		0.533	
TENURE				0.656	0.439	0.418	
OTR_INST		-0.456			0.8		
COMMSTNT			0.45		-0.534		0.426
TECHPASS						0.859	
BOOKSITE						0.771	
SCL_MONY	0.407						0.87
SUPVISOR							-0.781

[a] Rotation converged in 9 iterations.
[b] Only cases for which Design Own = n are used in the analysis phase.

variance explained.

There were six variables found in component three: free or low-cost personal Internet Service (FREE_ ISP), working on the instructors own time and in their own space (OWNTIME), better teaching assignments (BETR_TCH), research material for publications (RESEARCH), many students are more at ease with a computer than an

instructor (STNTCOMP), and instructors can communicate with their students more easily (COMMSTNT). Component three accounted for 12.67% of the variance explained.

Component four was made up of five variables: grade assignments submitted electronically (GRADELEC), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), tenure (TENURE), on-line grading and record keeping (ONLIN_RC), and loving computers (LOVECOMP). Component four accounted for 9.86% of the variance explained.

Component five had four variables. They are: tenure (TENURE), other instructors are doing it (OTR_INST), instructors can communicate with their students more easily (COMMSTNT), research material for publications (RESEARCH). This component accounted for 6.46% of the explained variance.

Component six was made up of four variables: afraid technology will pass me by (TECHPASS), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), and tenure (TENURE). This component accounted for 7.915% of the variance explained.

Four variables in component seven were found: saving the school money (SCL_MONY), the inverse of the supervisor requesting or ordering me to do it (SUPVISOR), easy for students to use (EASYSTNT), and instructors can communicate

with their students more easily (COMMSTNT). It accounted for 7.85% of the variance explained.

Subgroup Results

The fourth research question was a very broad question. It asked whether the factors were the same or different for several demographic subgroups. It also required comparing the results for these subgroups with the total group. These subgroups comprised various demographic characteristics of the sample, including gender, teaching field, terminal degree, age, and teaching experience. To answer this question, the sample was again separated into it s various demographic subgroups using filters, and factor analyses were performed on the subgroups.

Gender

The first demographic subgroup to be looked at was gender. All of the instructors surveyed answered this question.

Females. Sixty% of those who responded to the survey were females. There were nine factors computed. Overall, the female group accounted for 83.487% of the explained variance. Table 5 contains the Rotated Component Matrix for females.

Nine variables were located in component one: gaining more knowledge of technology (KNOWTECH), loving computers (LOVECOMP), challenge of learning and using new technology (TECHCHAL), learning more knowledge more knowledge of a particular subject (KNOWSUB), keeping computer/Internet skills current (CUR_SKIL), on-line grading and record keeping (ONLIN_RC), grade assignments submitted

electronically (GRADELEC), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), and Internet teaching will save time (SAVETIME). It accounted for 16.66% of the explained variance.

Component two contained six variables: research material for publications (RESEARCH), better teaching assignments (BETR_TCH), tenure (TENURE), other instructors are doing it (OTR_INST), pay (PAY), and saving the school money (SCL_MONY). It accounted for 8.93% of the variance explained.

Seven variables were found in component three. They are: college survival (COL_SURV), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), college recruitment and retaining students (COL_RCRT), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), competitive advantage

Table 5

Rotated Component Matrix-Females [a, b]

	Component								
	1	2	3	4	5	6	7	8	9
KNOWTECH	0.866								
LOVECOMP	0.815								
TECHCHAL	0.815								
KNOWSUB	0.709								
CUR_SKIL	0.686								
ONLIN_RC	0.643		0.44						
GRADELEC	0.493		0.48						

RESEARCH		0.888								
BETR_TCH		0.784								
TENURE		0.703								
OTR_INST		0.696								
PAY	0.549		-0.441		-0.435					
SCL_MONY		0.531			0.423					
COL_SURV			0.848							
BOOKPART			0.731							
COL_RCRT			0.633							
BOOKSITE	0.404		0.631							
COM_ADVG			0.599	0.514		0.425				
COMMSTNT				0.815						
CHNG_JOB				0.725						
SUPVISOR				-0.423						
STNTLIKE					0.800					
EASYSTNT					0.761					
FREE_ISP					0.681	0.417				
INTHING						0.919				
STNTCOMP							0.9			
TECHPASS						0.541	0.551			
RCH_STNT				0.434			-0.496			
SAVETIME	0.502							0.684		
STNFACE								0.627		
OWN_TIME									0.830	

[a] Rotation converged in 151 iterations.

[b] Only cases for which GENDER = F are used in the analysis phase.

or improving the image of the school (COM_ADVG), grade assignments submitted electronically (GRADELEC), and on-line grading and record keeping (ONLIN_RC). Component three accounted for 11.62% of the variance explained

Six variables existed in component four: competitive advantage or improving the image of the school (COM_ADVG), instructors can communicate with their students more easily (COMMSTNT), the constantly changing nature of the job (CHNG_JOB), my supervisor did not request or order me to do it (SUPVISOR), reaching students (RCH_STNT), and the inverse of pay (PAY). Component four accounted for 9.41 % of the explained variance.

Component five consisted of four variables. The variables were: students like it (STNTLIKE), it is easy for students to use (EASYSTNT), free or low-cost personal Internet Service (FREE_ ISP), and saving the school money (SCL_MONY). This component accounted for 8.58% of the explained variance.

Component six was made up of five variables: free or low-cost personal Internet Service (FREE_ ISP), distance learning/education is the in thing (INTHING), afraid technology will pass me by (TECHPASS), competitive advantage or improving the image of the school (COM_ADVG), and the inverse of pay (PAY). It accounted for 7.89% of the explained variance.

Three variables were found in component seven: many students are more at ease with a computer than an instructor (STNTCOMP), afraid technology will pass me by

(TECHPASS), and. reaching students (RCH_STNT). It accounted for 6.48% of the variance explained.

Component eight had two variables: Internet teaching will save time (SAVETIME), and instructors do not need to meet with students face to face as often (STNFACE). It accounted for 5.52% of the variance explained.

Component nine had only one variable in it. The one variable was working on the instructors own time and in their own space (OWNTIME). This component accounted for 5.16% of the variance explained.

Males. The sample who responded was 40% male. The factor analysis produced seven factors. Its overall percent of explained variance was 84.79%. Table 6 contains the Rotated Component Matrix for males.

Eleven variables were found in component one: college recruitment and retaining students (COL_RCRT), competitive advantage or improving the image of the school (COM_ADVG), college survival (COL_SURV), part of the constantly changing nature of the job (CHNG_JOB), reaching students (RCH_STNT), and students like it (STNTLIKE). Component one continues with: working on the instructors own time and in their own space (OWNTIME), saving the school money(SCL_MONY), keeping computer/Internet skills current (CUR_SKIL), instructors do not need to meet with students face to face as often (STNFACE), and it is easy for students to use (EASYSTNT). All these variable accounted for 18.72% of the explained variance.

Table 6

Rotated Component Matrix-Males [a, b]

	Component						
	1	2	3	4	5	6	7
COL_RCRT	0.909						
COM_ADVG	0.904						
COL_SURV	0.847						
CHNG_JOB	0.786						
RCH_STNT	0.769						
STNTLIKE	0.690	0.606					
OWN_TIME	0.518	0.474					-0.463
SCL_MONY	0.514		0.49				
STNTCOMP		0.896					
COMMSTNT		0.808					
SAVETIME		0.764					
EASYSTNT	0.435	0.752					
BETR_TCH		0.651					
BOOKSITE			0.895				
BOOKPART			0.829				
RESEARCH			0.771				
ONLIN_RC			0.69				0.561
PAY		0.66			0.507		
GRADELEC			0.599		0.598		
KNOWSUB				0.914			
TECHCHAL				0.883			
KNOWTECH				0.883			
LOVECOMP			0.424	0.802			
CUR_SKIL	0.484			0.703			
INTHING					0.811		
FREE_ISP					0.805		
SUPVISOR					0.803		
TENURE		0.485	0.501		0.528		
OTR_INST						0.706	
TECHPASS				0.512		0.553	
STNFACE	0.451						0.478

[a] Rotation converged in 10 iterations.

[b] Only cases for which GENDER = M are used in the analysis phase.

Eight variables were found in component two: many students are more at ease with a computer than an instructor (STNTCOMP), instructors can communicate with their students more easily (COMMSTNT), Internet teaching will save time (SAVETIME), and it is easy for students to use (EASYSTNT). The rest of the variables in component two are: better teaching assignments (BETR_TCH), students like it (STNTLIKE), tenure (TENURE), and working on the instructors own time and in their own space (OWNTIME). This component accounted for 15.65% of the variance explained.

The third component was made up of the nine variables listed: a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), research material for publications (RESEARCH), on-line grading and record keeping (ONLIN_RC), pay (PAY), grade assignments submitted electronically (GRADELEC), tenure (TENURE), saving the school money (SCL_MONY), and loving computers (LOVECOMP). Component three accounted for 15.05% of the variance explained.

Component four had six variables: learning more knowledge more knowledge of a particular subject (KNOWSUB), challenge of learning and using new technology (TECHCHAL), gaining more knowledge of technology (KNOWTECH), loving computers (LOVECOMP), keeping computer/Internet skills current (CUR_SKIL), and afraid technology will pass me by (TECHPASS). Component four accounted for 14.54% of the variance explained.

Five variables were found in component five. They were: distance learning/education is the in thing (INTHING), free or low-cost personal Internet Service (FREE_ ISP), the supervisor requesting or ordering me to do it (SUPVISOR), grade assignments submitted electronically (GRADELEC), and tenure (TENURE), This component accounted for 10.98% of the explained variance.

Component six was made up of three variables: other instructors are doing it (OTR_INST), afraid technology will pass me by (TECHPASS), and pay (PAY). This component accounted for 5.12% of the variance explained.

Three variables were found in component seven: on-line grading and record keeping (ONLIN_RC), instructors do not need to meet with students face to face as often (STNFACE), and working on the instructors own time and in their own space (OWNTIME). It accounted for 4.749% of the variance explained.

Teaching Field

Continuing to answer the fourth research question, a factor analysis was run to determine if there was a difference between teaching fields. This was a fill-in-the-blank question, and the answers varied greatly. In order to strengthen the results, the responses were coded into larger groups. For example, all the responses in the medical field were coded as Health and Human Services rather than individual answers like nursing, medical technology and other areas. The categories used were: Health and Human Services, Vocational/Technical, Business, and Computer Information Systems.

Health and Human Services. Twenty eight% of those who responded to the survey taught in Health and Human Services. There were nine factors computed. Overall, the Health and Human Services group accounted for 100.00% of the explained variance. Table 7 contains the Rotated Component Matrix for this group.

Component two contained eight variables: competitive advantage or improving the image of the school (COM_ADVG), college recruitment and retaining students (COL_RCRT), the inverse of pay (PAY), and college survival (COL_SURV). Other variables include: working on the instructors own time and in their own space (OWNTIME), distance learning/education is the in thing (INTHING), the inverse of other instructors are doing it (OTR_INST), and saving the school money (SCL_MONY). It accounted for 14.60% of the variance explained.

Ten variables were found in component three. They are: Internet teaching will save time (SAVETIME), the inverse of my supervisor requested or ordered me to do it (SUPVISOR), instructors can communicate with their students more easily (COMMSTNT), working on the instructors own time and in their own space (OWNTIME), and many students are more at ease with a computer than an instructor (STNTCOMP). The next variables are: keeping computer/Internet skills current (CUR_SKIL), grade assignments submitted electronically (GRADELEC), better teaching

Table 7

Rotated Component Matrix-Health and Human Services Instructors [a, b]

Component

	1	2	3	4	5	6	7	8	9
CHNG_JOB	0.930								
CUR_SKIL	0.788		0.488						
OTR_INST	-0.778	-0.421							
KNOWTECH	0.742								0.412
KNOWSUB	0.666								
LOVECOMP	0.623					0.402	0.603		
COM_ADVG		0.97							
COL_RCRT		0.886							
PAY	-0.501	-0.806							
COL_SURV		0.708				-0.495			
SAVETIME			0.972						
SUPVISOR			-0.764		0.503				
COMMSTNT			0.738			-0.432			
OWN_TIME		0.487	0.662		0.414				
STNTCOMP			0.585			-0.487			
EASYSTNT				0.922					
STNTLIKE				0.86					
BOOKPART				-0.691		-0.463			
Scl_mony	-0.451	0.406		0.469					
0.423									
TENURE					0.969				
RCH_STNT					-0.835				
ONLIN_RC			0.46		0.628				
RESEARCH						0.909			
INTHING		0.425				0.525			
TECHPASS							-0.91		
BETR_TCH			0.474				0.669		
STNFACE			0.45				0.613	-0.509	
TECHCHAL								0.896	
FREE_ISP	-0.485							0.717	
BOOKSITE									0.930
GRADELEC			0.484	-0.500					-0.597

[a] Rotation converged in 15 iterations.

b Only cases for which Department = 6 are used in the analysis phase.

assignments (BETR_TCH), on-line grading and record keeping (ONLIN_RC), and instructors do not need to meet with students face to face as often (STNFACE). Component three accounted for 14.10% of the variance explained.

Five variables existed in component four: it is easy for students to use (EASYSTNT), students like it (STNTLIKE), the inverse of textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), the inverse of saving the school money (SCL_MONY), and the inverse of grade assignments submitted electronically (GRADELEC). Component four accounted for 11.35% of the explained variance.

Component five had five variables. The variables were: tenure (TENURE), the inverse of reaching students (RCH_STNT), on-line grading and record keeping (ONLIN_RC), my supervisor requested or ordered me to do it (SUPVISOR), and working on the instructors own time and in their own space (OWNTIME). This component accounted for 11.22% of the explained variance.

Component six was made up of seven variables: research material for publications (RESEARCH), distance learning/education is the in thing (INTHING), college survival (COL_SURV), the inverse of many students are more at ease with a computer than an instructor (STNTCOMP), the inverse of textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), instructors can communicate with their students more easily

(COMMSTNT), and loving computers (LOVECOMP). It accounted for 8.85% of the explained variance.

Four variables were found in component seven: not being afraid technology will pass me by (TECHPASS), better teaching assignments (BETR_TCH), reaching students (RCH_STNT), instructors do not need to meet with students face to face as often (STNFACE), and loving computers (LOVECOMP). It accounted for 8.73% of the variance explained.

Component eight had three components: instructors do not need to meet with students face to face as often (STNFACE), the challenge of learning and using new technology (TECHCHAL), and free or low-cost personal Internet Service (FREE_ ISP). It accounted for 7.86% of the variance explained.

Component nine had four variables in it. The variables are: a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), the inverse of grade assignments submitted electronically (GRADELEC), the inverse of saving the school money (SCL_MONY), and gaining more knowledge of technology (KNOWTECH). This component accounted for 7.82% of the variance explained.

Vocational/Technical. Twenty eight of the subjects who responded taught in Vocational/Technical departments. The factor analysis produced seven factors, and the percent of explained variance was 100.00%. The Vocational/Technical group was a group of departments which deal with skilled trades and other areas which do not fit into the

other categories. Automotive Technology, Electrical and Power Technology, and Electronics Technology were examples of this type of department. Table 8 contains the Rotated Component Matrix for females.

Seventeen variables were located in component one: college recruitment and retaining students (COL_RCRT), many students are more at ease with a computer than an instructor (STNTCOMP), learning more knowledge more knowledge of a particular subject (KNOWSUB), tenure (TENURE), competitive advantage or improving the image of the school (COM_ADVG), and instructors can communicate with their students more easily (COMMSTNT). Additional variables include: keeping computer/Internet skills current (CUR_SKIL), students like it (STNTLIKE), loving computers (LOVECOMP), reaching students (RCH_STNT), research material for publications (RESEARCH), and part of the constantly changing nature of the job (CHNG_JOB). Other variables include: working on the instructors own time and in their own space (OWNTIME), the inverse of a free or low-cost personal Internet Service (FREE ISP), saving the school money (SCL_MONY), better teaching assignments (BETR_TCH), on-line grading and record keeping (ONLIN_RC). All these variables account for 36.46% of the explained variance.

Component two had nine variables. They were: college survival (COL_SURV), textbook publisher either hosted the Web site or provided Web site course support at their

Table 8

Rotated Component Matrix-Vocational/Technical Instructors [a, b]

	Component				
	1	2	3	4	5
COL_RCRT	0.982				
STNTCOMP	0.966				
KNOWSUB	-0.966				
TENURE	0.934				
COM_ADVG	0.934				
COMMSTNT	0.916				
CUR_SKIL	0.900				
STNTLIKE	0.836			0.429	
LOVECOMP	0.759				0.569
RCH_STNT	0.745			0.493	-0.416
RESEARCH	0.7		0.678		
CHNG_JOB	0.699	-0.448			
OWN_TIME	0.651	-0.545		0.491	
FREE_ISP	-0.646			-0.536	
COL_SURV		0.953			
BOOKSITE		0.942			
BOOKPART		0.942			
ONLIN_RC	0.437	0.879			
PAY	0.867				
EASYSTNT		0.733		0.636	
GRADELEC		0.637	0.586	0.471	
STNFACE			0.984		
SUPVISOR			0.951		
BETR_TCH	0.523		0.758		
OTR_INST			0.694		-0.676
SAVETIME			0.682	0.639	
TECHPASS				-0.844	0.419
INTHING			0.517	-0.832	
SCL_MONY	0.578			-0.59	
KNOWTECH					0.940
TECHCHAL					0.807

[a] Rotation converged in 10 iterations.

[b] Only cases for which Department = 3 are used in the analysis phase.

Web site (BOOKSITE), the textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), on-line grading and record keeping (ONLIN_RC), and pay (PAY). Additional variables include: it is easy for students to use (EASYSTNT), grade assignments submitted electronically (GRADELEC), the inverse of working on the instructors own time and in their own space (OWNTIME), and the inverse of part of the constantly changing nature of the job (CHNG_JOB). This component accounted for 20.93% of the variance explained.

The third component consisted of eight variables in it: grade assignments submitted electronically (GRADELEC), instructors do not need to meet with students face to face as often (STNFACE), my supervisor requesting or ordering me to do it (SUPVISOR), better teaching assignments (BETR_TCH), other instructors are doing it (OTR_INST), Internet teaching will save time (SAVETIME), research material for publications (RESEARCH), and distance learning/education is the in thing (INTHING). Component three accounted for 16.86 of the variance explained.

Ten variables were found in component four: the inverse of being afraid technology will pass me by (TECHPASS), the inverse of distance learning/education is the in thing (INTHING), the inverse of saving the school money (SCL_MONY), Internet teaching will save time (SAVETIME), it is easy for students to use (EASYSTNT), the inverse of a free or low-cost personal Internet Service (FREE ISP), reaching students (RCH_STNT), working on the instructors own time and in their own space (OWNTIME),

grade assignments submitted electronically (GRADELEC), and students like it (STNTLIKE). Component four accounted for 14.30% of the variance explained.

Component five had six variables. They are: the challenge of learning and gaining more knowledge of technology (KNOWTECH), the challenge of learning and using new technology (TECHCHAL), the inverse of other instructors are doing it (OTR_INST), loving computers (LOVECOMP), afraid technology will pass me by (TECHPASS), and the inverse of reaching students (RCH_STNT). This component accounted for 11.41% of the explained variance.

Business. Twenty% of those who responded to the survey taught in Business. There were eight factors computed. Overall, this group accounted for 97.25% of the explained variance. Table 9 contains the Rotated Component Matrix for this group.

Nine variables were located in component one: learning more knowledge more knowledge of a particular subject (KNOWSUB), gaining more knowledge of technology (KNOWTECH), college survival (COL_SURV), loving computers (LOVECOMP), and competitive advantage or improving the image of the school (COM_ADVG). The next variables are: the challenge of learning and using new technology (TECHCHAL), reaching students (RCH_STNT), free or low-cost personal Internet Service (FREE_ ISP), and grade assignments submitted electronically (GRADELEC). It accounted for 17.90% of the explained variance.

Table 9

Rotated Component Matrix-Business Instructors [a, b]

	Component							
	1	2	3	4	5	6	7	8
KNOWSUB	0.889							
KNOWTECH	0.859							
COL_SURV	-0.852							
LOVECOMP	0.77						0.415	
COM_ADVG	-0.68			0.405				
TECHCHAL	0.647						0.596	
RCH_STNT	0.569			0.410	0.534			
FREE_ISP	0.552	0.482		-0.434				
CHNG_JOB		0.840						
COMMSTNT		0.826						
BOOKSITE		-0.741						-0.500
SUPVISOR		0.687		-0.588				
PAY	-0.68		0.486		0.425			
STNFACE		0.626	0.523				-0.439	
STNTLIKE		0.561	0.491		0.52			
STNTCOMP			0.891					
OTR_INST			0.886					
TECHPASS			0.835					
INTHING				-0.890				
GRADELEC	0.568			-0.689				
BOOKPART				0.622	0.471			
COL_RCRT					0.918			
Scl_mony					0.795			
CUR_SKIL						0.91		
ONLIN_RC		-0.510				0.656		
RESEARCH				0.492	0.434	0.636		
OWN_TIME							0.94	
BETR_TCH							0.697	0.458
SAVETIME								0.740
EASYSTNT		0.414	0.427					0.606
TENURE						0.553		0.596

[a] Rotation converged in 24 iterations.

[b] Only cases for which Department = 4 are used in the analysis phase.

Component two contained ten variables: the constantly changing nature of the job (CHNG_JOB), instructors can communicate with their students more easily (COMMSTNT), the inverse of a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), my supervisor requested or ordered me to do it (SUPVISOR), the inverse of pay (PAY), instructors do not need to meet with students face to face as often (STNFACE),students like it (STNTLIKE), the inverse of on-line grading and record keeping (ONLIN_RC), free or low-cost personal Internet Service (FREE_ ISP), and it is easy for students to use (EASYSTNT). It accounted for 15.47% of the variance explained.

Six variables were found in component three. They are: instructors do not need to meet with students face to face as often (STNFACE), students like it (STNTLIKE), many students are more at ease with a computer than an instructor (STNTCOMP), other instructors are doing it (OTR_INST), being afraid technology will pass me by (TECHPASS), it is easy for students to use (EASYSTNT)and research material for publications (RESEARCH). Component three accounted for 11.98% of the variance explained.

Nine variables existed in component four: the inverse of distance learning/ education is the in thing (INTHING), grade assignments submitted electronically (GRADELEC), the textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), my supervisor requested or ordered me to do it (SUPVISOR), and research material for publications

(RESEARCH). The next four variables include: pay (PAY), free or low-cost personal Internet Service (FREE_ ISP), reaching students (RCH_STNT), and competitive advantage or improving the image of the school (COM_ADVG). Component four accounted for 11.72 % of the explained variance.

Component five had six variables. The variables were: college recruitment and retaining students (COL_RCRT), saving the school money (SCL_MONY), reaching students (RCH_STNT), students like it (STNTLIKE), the inverse of textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), and. This component accounted for 11.22% of the explained variance.

Component six was made up of five variables: keeping computer/Internet skills current (CUR_SKIL), on-line grading and record keeping (ONLIN_RC), research material for publications (RESEARCH), tenure (TENURE), and pay (PAY). It accounted for 8.85% of the explained variance.

Five variables were found in component seven: working on the instructors own time and in their own space (OWNTIME), better teaching assignments (BETR_TCH), the challenge of learning and using new technology (TECHCHAL), the inverse of instructors do not need to meet with students face to face as often (STNFACE), and loving computers (LOVECOMP). It accounted for 10.25% of the variance explained.

Component eight had five components: Internet teaching will save time (SAVETIME), it is easy for students to use (EASYSTNT), tenure (TENURE), a

textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), and better teaching assignments (BETR_TCH). It accounted for 7.39% of the variance explained.

Computer Information Systems. Thirty-nine of those who responded to the survey taught either Computer or Information Systems classes. There were nine factors computed. Overall, this group accounted for 87.11% of the explained variance. Table 10 contains the Rotated Component Matrix for these instructors.

Ten variables were located in component one: loving computers (LOVECOMP), challenge of learning and using new technology (TECHCHAL), gaining more knowledge of technology (KNOWTECH), learning more knowledge more knowledge of a particular subject (KNOWSUB), keeping computer/Internet skills current (CUR_SKIL), and afraid technology will pass me by (TECHPASS), Other variables include: Internet teaching will save time (SAVETIME), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), on-line grading and record keeping (ONLIN_RC), and working on the instructors own time and in their own space (OWNTIME). It accounted for 19.19% of the explained variance.

Component two contained nine variables: research material for publications (RESEARCH), other instructors are doing it (OTR_INST), better teaching assignments

Table 10

Rotated Component Matrix-Computer Information Systems [a]

	Component						
	1	2	3	4	5	6	7
LOVECOMP	0.905						
TECHCHAL	0.888						
KNOWTECH	0.865						
KNOWSUB	0.822						
CUR_SKIL	0.819						
TECHPASS	0.61						
RESEARCH		0.87					
OTR_INST		0.837					
BETR_TCH		0.83					
Scl_mony		0.779					
TENURE		0.732					
SAVETIME	0.403	0.565					
COL_RCRT			0.854				
RCH_STNT			0.84				
COL_SURV			0.81				
CHNG_JOB			0.775				
COM_ADVG			0.761				
STNTLIKE			0.644		0.492		
BOOKPART				0.862			
GRADELEC				0.817			
BOOKSITE	0.457	0.402		0.619			
ONLIN_RC	0.465		0.462	0.502			
SUPVISOR					0.948		
STNTCOMP					0.83		
INTHING					0.506		
COMMSTNT						0.77	
FREE_ISP					0.463	0.617	
PAY	0.509				-0.516		
STNFACE			0.523				0.65
OWN_TIME	0.447						0.637
EASYSTNT		0.402	0.404			0.454	0.481

[a] Rotation converged in 14 iterations.

[b] Only cases for which Department = 5 are used in the analysis phase.

(BETR_TCH), saving the school money (SCL_MONY), tenure (TENURE), and Internet teaching will save time (SAVETIME). The other variables are: a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), pay (PAY), it is easy for students to use (EASYSTNT). It accounted for 17.42% of the variance explained.

Nine variables were found in component three. They were: college recruitment and retaining students (COL_RCRT), reaching students (RCH_STNT), college survival (COL_SURV), the constantly changing nature of the job (CHNG_JOB), and competitive advantage or improving the image of the school (COM_ADVG). It also includes: students like it (STNTLIKE), on-line grading and record keeping (ONLIN_RC), instructors do not need to meet with students face to face as often (STNFACE), and it is easy for students to use (EASYSTNT). Component three accounted for 17.14% of the variance explained.

Four variables existed in component four: textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), grade assignments submitted electronically (GRADELEC), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), and on-line grading and record keeping (ONLIN_RC). Component four accounted for 10.43 % of the explained variance.

Component five had five variables. The variables were: my supervisor requested or ordered me to do it (SUPVISOR), many students are more at ease with a computer than an instructor (STNTCOMP), distance learning/education is the in thing (INTHING),

students like it (STNTLIKE), and free or low-cost personal Internet Service (FREE_ ISP). This component accounted for 9.97% of the explained variance.

Component six was made up of four variables: instructors can communicate with their students more easily (COMMSTNT), free or low-cost personal Internet Service (FREE_ ISP), the inverse of pay (PAY), and it is easy for students to use (EASYSTNT). It accounted for 7.16% of the explained variance.

Three variables were found in component seven: instructors do not need to meet with students face to face as often (STNFACE), working on the instructors own time and in their own space (OWNTIME), and it is easy for students to use (EASYSTNT). It accounted for 5.81% of the variance explained.

Education

Another area of exploration was to look at the differences in the responses between those with different terminal degrees. None of the subjects reported having an associate s degree. A factor analysis was run on the data as separated by filters for the three other degrees, the bachelor s, master s, and doctoral degrees.

Bachelor s Degree. There were 19 subjects who responded to the education question and reported that they had bachelor s degrees. The factor analysis produced three factors. Its overall alpha was .9093 and the percent of explained variance was 100.00. Table 11 contains the Rotated Component Matrix for females.

Table 11

Rotated Component Bachelor s Degrees [a, b]

	Component		
	1	2	3
COMMSTNT	0.998		
GRADELEC	0.994		
OWN_TIME	0.993		
SAVETIME	0.983		
LOVECOMP	0.953		
SUPVISOR	-0.953		
ONLIN_RC	0.950		
STNFACE	0.916		
TECHPASS	0.914		
KNOWTECH	0.910		0.415
CUR_SKIL	0.901		
STNTLIKE	0.814	0.436	
STNTCOMP	0.78	-0.408	0.475
OTR_INST	-0.753	0.621	
KNOWSUB	0.739		0.602
TECHCHAL	0.739		0.602
TENURE	0.711	-0.589	
BOOKPART	0.637	-0.529	0.56
COL_RCRT	-0.616	-0.547	-0.567
BETR_TCH	0.616	0.547	0.567
PAY	0.984		
RESEARCH		0.984	
CHNG_JOB		-0.984	
COL_SURV		-0.965	
SCL_MONY		0.905	
RCH_STNT		0.879	
COM_ADVG		-0.815	-0.483
EASYSTNT	0.582	0.783	
FREE_ISP			0.976
BOOKSITE			0.976
INTHING	-0.422		-0.884

[a] Rotation converged in 5 iterations.

[b] Only cases for which Education = B are used in the analysis phase.

Twenty-two variables were located in component one: instructors can communicate with their students more easily (COMMSTNT), grade assignments submitted electronically (GRADELEC), working on the instructors own time and in their own space (OWNTIME), Internet teaching will save time (SAVETIME), loving computers (LOVECOMP), and the supervisor requesting or ordering me to do it (SUPVISOR). The variables continue: on-line grading and record keeping (ONLIN_RC), instructors do not need to meet with students face to face as often (STNFACE), afraid technology will pass me by (TECHPASS), gaining more knowledge of technology(KNOWTECH), keeping computer/Internet skills current (CUR_SKIL), students like it (STNTLIKE), many students are more at ease with a computer than an instructor (STNTCOMP), and the inverse of other instructors are doing it (OTR_INST). Component one also included: learning more knowledge of a particular subject (KNOWSUB), challenge of learning and using new technology (TECHCHAL), tenure (TENURE), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), the inverse of college recruitment and retaining students (COL_RCRT), and better teaching assignments (BETR_TCH), easy for students to use (EASYSTNT), free or low-cost personal Internet Service (FREE_ ISP). All these variable accounted for 29.92% of the explained variance.

Fifteen variables were found in component two: pay (PAY), research material for publications (RESEARCH), the inverse of part of the constantly changing nature of the job (CHNG_JOB), the inverse of college survival (COL_SURV), saving the school

money(SCL_MONY), reaching students (RCH_STNT), the inverse of competitive advantage or improving the image of the school (COM_ADVG), easy for students to use (EASYSTNT). It continued: other instructors are doing it (OTR_INST), the inverse of tenure (TENURE), the inverse of textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), the inverse of college recruitment and retaining students (COL_RCRT), and better teaching assignments (BETR_TCH), students like it (STNTLIKE), and many students are *not* more at ease with a computer than an instructor (STNTCOMP). This component accounted for 29.92% of the variance explained.

There were eleven variables found in component three: gaining more knowledge of technology (KNOWTECH), many students are more at ease with a computer than an instructor (STNTCOMP), learning more knowledge more knowledge of a particular subject (KNOWSUB), challenge of learning and using new technology (TECHCHAL), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), the inverse of college recruitment and retaining students (COL_RCRT), and better teaching assignments (BETR_TCH), competitive advantage or improving the image of the school (COM_ADVG), free or low-cost personal Internet Service (FREE_ ISP), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), and distance learning/education is the in thing (INTHING). Component three accounted for 20.28% of the variance explained.

Master s Degree. Sixty three% of the sample members who responded had master s degrees. The factor analysis produced seven factors. It s overall alpha was .9093 and the percent of explained variance was 75.50. Table 12 contains the Rotated Component Matrix for females.

Six variables were located in component one: college recruitment and retaining students (COL_RCRT), College survival (COL_SURV). competitive advantage or improving the image of the school (COM_ADVG), reaching students (RCH_STNT), part of the constantly changing nature of the job (CHNG_JOB), and students like it (STNTLIKE). These variables account for 13.76% of the explained variance, In component two, five variables were found. They were: challenge of learning and using new technology (TECHCHAL), learning more knowledge more knowledge of a particular subject (KNOWSUB), loving computers (LOVECOMP), keeping computer/Internet skills current (CUR_SKIL), and challenge of learning and gaining more knowledge of technology (KNOWTECH). This component accounted for 13.12% of the variance explained.

The third component consisted of eight variables: other instructors are doing it (OTR_INST), better teaching assignments (BETR_TCH), research material for publications (RESEARCH), saving the school money (SCL_MONY), tenure (TENURE),

Table 12

Rotated Component Matrix-Master s Degree [a, b]

	Component						
	1	2	3	4	5	6	7
COL_RCRT	0.894						
COL_SURV	0.834						
COM_ADVG	0.830						
RCH_STNT	0.787						
CHNG_JOB	0.583				0.434		
TECHCHAL		0.819					
KNOWSUB		0.778					
LOVECOMP		0.760					
CUR_SKIL		0.741					
KNOWTECH		0.726					
OTR_INST			0.812				
BETR_TCH			0.765				
RESEARCH			0.641	0.417			
Scl_mony			0.591				
TENURE			0.574	0.455			
SAVETIME			0.528				
OWN_TIME			0.479				
BOOKPART				0.842			
BOOKSITE				0.761			
ONLIN_RC				0.738			
GRADELEC				0.612		0.404	
PAY		0.411	0.43				
COMMSTNT					0.770		
EASYSTNT					0.770		
STNTLIKE	0.438				0.744		
STNTCOMP					0.712		0.447
TECHPASS						0.746	
FREE_ISP						0.693	
SUPVISOR							0.86
INTHING						0.484	0.621
STNFACE					0.411		0.594

[a] Rotation converged in 11 iterations.

[b] Only cases for which Education = M are used in the analysis phase.

Internet teaching will save time (SAVETIME), working on the instructors own time and in their own space (OWNTIME), and pay (PAY). Component three accounted for 12.04% of the variance explained.

Seven variables were found in component four: textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), on-line grading and record keeping (ONLIN_RC), grade assignments submitted electronically (GRADELEC), pay (PAY), tenure (TENURE), and research material for publications (RESEARCH). Component four accounted for 10.91% of the variance explained.

Component five had an alpha of 0.7595 and six variables. They are: instructors can communicate with their students more easily (COMMSTNT), it is easy for students to use (EASYSTNT), students like it (STNTLIKE), many students are more at ease with a computer than an instructor (STNTCOMP), and part of the constantly changing nature of the job (CHNG_JOB), and instructors do not need to meet with students face to face as often (STNFACE). This component accounted for 10.60% of the explained variance.

Component six was made up of four variables: afraid technology will pass me by (TECHPASS), free or low-cost personal Internet Service (FREE ISP), grade assignments submitted electronically (GRADELEC), and distance learning/education is the in thing (INTHING). This component accounted for 7.69% of the variance explained.

Component seven had four components found in it: my supervisor requesting or ordering me to do it (SUPVISOR), distance learning/education is the in thing (INTHING), instructors do not need to meet with students face to face as often (STNFACE), and many students are more at ease with a computer than an instructor (STNTCOMP). It accounted for 7.32% of the variance explained.

Doctoral Degree. Eighteen of the subjects who responded had doctoral degrees. The factor analysis produced seven factors, Its overall alpha was.9093 and the percent of explained variance was100.00%. Table 13 contains the Rotated Component Matrix for females.

Fourteen variables were located in component one: the inverse of challenge of learning and using new technology (TECHCHAL), the inverse of the challenge of learning and gaining more knowledge of technology (KNOWTECH), free or low-cost personal Internet Service (FREE ISP), the inverse of keeping computer/Internet skills current (CUR_SKIL), the inverse of , loving computers (LOVECOMP), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), and other instructors are doing it (OTR_INST). The other variables in component one include: the inverse of working on the instructors own time and in their own space (OWNTIME), the inverse of learning more knowledge more knowledge of a particular subject (KNOWSUB), my supervisor requesting or ordering me to do it (SUPVISOR), grade assignments submitted

Table 13

Rotated Component Matrix-Doctoral Degrees [a, b]

	Component				
	1	2	3	4	5
TECHCHAL	-0.979				
KNOWTECH	-0.973				
FREE_ISP	0.961				
CUR_SKIL	-0.959				
LOVECOMP	-0.944				
BOOKPART	0.935				
OTR_INST	0.884				
OWN_TIME	-0.761	0.539			
KNOWSUB	-0.744		0.601		
SUPVISOR	0.688			-0.510	
GRADELEC	0.655		0.625		
RESEARCH		0.978			
CHNG_JOB		0.940			
PAY	-0.896				
STNTCOMP		0.835			-0.403
COMMSTNT		0.768		0.553	
STNTLIKE		0.753			-0.58
INTHING	0.602	0.709			
COL_RCRT	0.623	0.647			
STNFACE			0.921		
COL_SURV			0.892		
EASYSTNT			0.819	0.437	
ONLIN_RC			0.794		0.579
TECHPASS			-0.747	-0.607	
TENURE	0.429		-0.67		-0.42
BETR_TCH		0.661	0.668		
RCH_STNT				0.913	
SCL_MONY				0.869	
SAVETIME			0.414	0.805	
BOOKSITE		-0.507	0.453	-0.587	0.423
COM_ADVG					0.914

[a] Rotation converged in 14 iterations.

[b] Only cases for which Education = D are used in the analysis phase.

electronically (GRADELEC), college recruitment and retaining students (COL_RCRT), distance learning/education is the in thing (INTHING), and tenure (TENURE). All these variables account for 32.75% of the explained variance.

Component two had eleven variables. They were: research material for publications (RESEARCH), part of the constantly changing nature of the job (CHNG_JOB), the inverse of pay (PAY), many students are more at ease with a computer than an instructor (STNTCOMP), and instructors can communicate with their students more easily (COMMSTNT). More variables include: students like it (STNTLIKE), distance learning/education is the in thing (INTHING), college recruitment and retaining students (COL_RCRT), better teaching assignments (BETR_TCH), working on the instructors own time and in their own space (OWNTIME), and the inverse of a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE). This component accounted for 23.81% of the variance explained.

The third component consisted of eleven variables found in it: instructors do not need to meet with students face to face as often (STNFACE), college survival (COL_SURV), it is easy for students to use (EASYSTNT), on-line grading and record keeping (ONLIN_RC), afraid technology will pass me by (TECHPASS), and the inverse of tenure (TENURE). Others are: better teaching assignments (BETR_TCH), grade assignments submitted electronically (GRADELEC), learning more knowledge more knowledge of a particular subject (KNOWSUB), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), and

Internet teaching will save time (SAVETIME). Component three accounted for 19.42 of the variance explained.

Eight variables were found in component four: reaching students (RCH_STNT), saving the school money (SCL_MONY), Internet teaching will save time (SAVETIME), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), afraid technology will pass me by (TECHPASS), instructors can communicate with their students more easily (COMMSTNT), the inverse of my supervisor requesting or ordering me to do it (SUPVISOR), and it is easy for students to use (EASYSTNT). Component four accounted for 14.21% of the variance explained.

Component five had six variables. They are: competitive advantage or improving the image of the school (COM_ADVG), students like it (STNTLIKE), on-line grading and record keeping (ONLIN_RC), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), the inverse of tenure (TENURE), and the inverse of many students are more at ease with a computer than an instructor (STNTCOMP),. This component accounted for 9.82% of the explained variance.

Age

Age was another characteristic to be examined in response to the fourth research question. Due to the scattering of the data, it was necessary to combine several age groups in order to ensure there were enough cases to support the factor analysis. In this case, data provided by those who checked the ages 25-29, 30-34, 35-39 and 40-44 were combined

into one category which allowed the categories to be roughly the same size. There were no subjects who reported ages less than twenty-five.

Forty four and under. Twenty-seven% of those who responded to the survey were aged 44 and under. There were nine factors computed. Overall, this age group accounted for 92.61% of the explained variance. Table 14 contains the Rotated Component Matrix for subjects aged 44 and under.

Seven variables were located in component one: gaining more knowledge of technology (KNOWTECH), challenge of learning and using new technology (TECHCHAL), learning more knowledge of a particular subject (KNOWSUB), loving computers (LOVECOMP), keeping computer/Internet skills current (CUR_SKIL), college survival (COL_SURV), instructors do not need to meet with students face to face as often (STNFACE), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), the constantly changing nature of the job (CHNG_JOB), afraid technology will pass me by (TECHPASS), and college recruitment and retaining students (COL_RCRT). This component accounted for 15.88% of the explained variance.

Component two contained twelve variables: other instructors are doing it (OTR_INST), research material for publications (RESEARCH), saving the school money (SCL_MONY), better teaching assignments (BETR_TCH), it is easy for students to use

Table 14

Rotated Component Matrix-Ages Forty-Four and Under [a, b]

	Component							
	1	2	3	4	5	6	7	8
KNOWTECH	0.958							
TECHCHAL	0.945							
KNOWSUB	0.845							
LOVECOMP	0.837							
CUR_SKIL	0.822		0.462					
COL_SURV	0.629					0.577		
COM_ADVG	0.609			0.441				
OTR_INST		0.944						
RESEARCH		0.853						
SCL_MONY		0.809						
BETR_TCH		0.766						
EASYSTNT		0.719	0.617					
INTHING		0.692		0.537				
TENURE		0.64	0.427					
SAVETIME		0.619	0.492					
COMMSTNT			0.824				0.430	
STNTLIKE		0.531	0.785					
CHNG_JOB	0.479		0.756					
STNFACE	0.53		0.685					
STNTCOMP			0.642			0.631		
OWN_TIME			0.57		-0.508			
ONLIN_RC				0.889				
GRADELEC				0.765			0.500	
FREE_ISP					0.893			
TECHPASS	0.437				0.779			
SUPVISOR		0.45			0.512			
BOOKPART						0.838		
RCH_STNT							0.952	
COL_RCRT	0.418	0.486					0.517	
PAY							0.875	
BOOKSITE	0.484	0.432						0.585

[a] Rotation converged in 15 iterations.

[b] Only cases for which AGE_2 = 4 are used in the analysis phase.

(EASYSTNT), and distance learning/education is the in thing (INTHING). Tenure (TENURE), Internet teaching will save time (SAVETIME), students like it (STNTLIKE), college recruitment and retaining students (COL_RCRT), my supervisor requested or ordered me to do it (SUPVISOR), and a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), were also variables in component two. It accounted for 19.79% of the variance explained.

While working with the statistics ten variables were found in component three. They are: instructors can communicate with their students more easily (COMMSTNT), students like it (STNTLIKE), the constantly changing nature of the job (CHNG_JOB), instructors do not need to meet with students face to face as often (STNFACE), many students are more at ease with a computer than an instructor (STNTCOMP), it is easy for students to use (EASYSTNT), working on the instructors own time and in their own space (OWNTIME), keeping computer/Internet skills current (CUR_SKIL), tenure (TENURE), and Internet teaching will save time (SAVETIME), Component three accounted for 15.35% of the variance explained.

Four variables existed in component four: on-line grading and record keeping (ONLIN_RC), grade assignments submitted electronically (GRADELEC), competitive advantage or improving the image of the school (COM_ADVG), and distance learning/education is the in thing (INTHING). Component four accounted for 8.50 % of the explained variance.

Component five had four variables. The variables were: free or low-cost personal Internet Service (FREE_ ISP), afraid technology will pass me by (TECHPASS), my supervisor requested or ordered me to do it (SUPVISOR), and working on the instructors own time and in their own space (OWNTIME). This component accounted for 7.77% of the explained variance.

Component six was made up of three variables: textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), many students are more at ease with a computer than an instructor (STNTCOMP), and college survival (COL_SURV). It accounted for 7.70% of the explained variance.

Four variables were found in component seven: reaching students (RCH_STNT), college recruitment and retaining students (COL_RCRT), grade assignments submitted electronically (GRADELEC), and many students are more at ease with a computer than an instructor (STNTCOMP). It accounted for 6.63% of the variance explained.

Component eight had two components: pay (PAY), and Internet teaching will save time (SAVETIME), and. a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), It accounted for 5.52% of the variance explained.

Forty-five to forty-nine. Twenty three of those who responded to the survey were in the forty to forty five range. There were seven factors computed. Overall, the female

group accounted for 90.28% of the explained variance. Table 15 is the Rotated Component Matrix for this age range.

Ten variables were located in component one: Internet teaching will save time (SAVETIME). gaining more knowledge of technology (KNOWTECH), learning more knowledge more knowledge of a particular subject (KNOWSUB), loving computers (LOVECOMP), the challenge of learning and using new technology (TECHCHAL), better teaching assignments (BETR_TCH), grade assignments submitted electronically (GRADELEC), keeping computer/Internet skills current (CUR_SKIL), working on the instructors own time and in their own space (OWNTIME), and it is easy for students to use (EASYSTNT). It accounted for 17.60% of the explained variance.

Component two contained nine variables: the constantly changing nature of the job (CHNG_JOB), competitive advantage or improving the image of the school (COM_ADVG), college survival (COL_SURV), college recruitment and retaining students (COL_RCRT), instructors do not need to meet with students face to face as often (STNFACE), and working on the instructors own time and in their own space (OWNTIME), distance learning/education is the in thing (INTHING), reaching students (RCH_STNT), and the inverse of pay (PAY) It accounted for 16.91% of the variance explained.

Seven variables were found in component three. They are: my supervisor *did not* request or order me to do it (SUPVISOR), instructors can communicate with their

Table 15

Rotated Component Matrix-Ages Forty-Five to Forty-Nine [a, b]

	Component						
	1	2	3	4	5	6	7
SAVETIME	0.890						
KNOWTECH	0.872						
KNOWSUB	0.809						
LOVECOMP	0.729						0.430
TECHCHAL	0.704	0.482					
BETR_TCH	0.549					0.511	
GRADELEC	0.508			0.504			
CUR_SKIL	0.493						
CHNG_JOB		0.966					
COM_ADVG		0.833					
COL_RCRT		0.73		0.464			
COL_SURV		0.673	0.567				
STNFACE		0.633				-0.488	
OWN_TIME	0.616	0.633					
SUPVISOR			-0.935				
COMMSTNT			0.758				
RCH_STNT		0.443	0.689				
Scl_mony			0.605	0.449			
EASYSTNT	0.431		0.580				
BOOKPART				0.934			
BOOKSITE				0.855			
ONLIN_RC				0.638			
TECHPASS					0.905		
OTR_INST					0.858		
FREE_ISP					0.827		
INTHING		0.580			0.686		
PAY	-0.456				0.834		
TENURE						0.829	
RESEARCH						0.632	
STNTCOMP							0.891
STNTLIKE							0.648

[a] Rotation converged in 11 iterations.

[b] Only cases for which AGE_2 = 5 are used in the analysis phase.

students more easily (COMMSTNT), reaching students (RCH_STNT), saving the school money (SCL_MONY), it is easy for students to use (EASYSTNT), college survival (COL_SURV), and the challenge of learning and using new technology (TECHCHAL). Component three accounted for 11.62% of the variance explained.

Six variables existed in component four: a textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), on-line grading and record keeping (ONLIN_RC), grade assignments submitted electronically (GRADELEC), college recruitment and retaining students (COL_RCRT), and saving the school money (SCL_MONY). Component four accounted for 12.08 % of the explained variance.

Component five had four variables. The variables were: afraid technology will pass me by (TECHPASS), other instructors are doing it (OTR_INST), free or low-cost personal Internet Service (FREE_ ISP), and distance learning/education is the in thing (INTHING). This component accounted for 11.316% of the explained variance.

Component six was made up of five variables: pay (PAY), tenure (TENURE), research material for publications (RESEARCH), better teaching assignments (BETR_TCH), instructors do not need to meet with students face to face as often (STNFACE). It accounted for 7.89% of the explained variance.

Three variables were found in component seven: many students are more at ease with a computer than an instructor (STNTCOMP), students like it (STNTLIKE), and loving computers (LOVECOMP). It accounted for 8.16% of the variance explained.

Fifty to fifty-four. Twenty-four of those who responded to the survey were in the 50 to 54 age range There were seven factors computed. Overall, the this group accounted for 100.00% of the explained variance. Table 16 contains the Rotated Component Matrix for these instructors.

Ten variables were located in component one: the challenge of learning and using new technology (TECHCHAL), keeping computer/Internet skills current (CUR_SKIL), learning more knowledge more knowledge of a particular subject (KNOWSUB), loving computers (LOVECOMP), and gaining more knowledge of technology (KNOWTECH). Other variables include: being afraid technology will pass me by (TECHPASS), the inverse of instructors do not need to meet with students face to face as often (STNFACE), distance learning/education is the in thing (INTHING), free or low-cost personal Internet Service (FREE_ ISP) and Internet teaching will save time (SAVETIME). It accounted for 20.10% of the explained variance.

Component two contained ten variables: a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), grade assignments submitted electronically

Table 16

Rotated Component Matrix-Ages Fifty to Fifty-Four [a, b]

	Component						
	1	2	3	4	5	6	7
TECHCHAL	0.977						
CUR_SKIL	0.904						
KNOWSUB	0.903						
LOVECOMP	0.895						
KNOWTECH	0.747				-0.577		
TECHPASS	0.727	0.503		0.458			
STNFACE	-0.686						
BOOKPART		0.908					
BOOKSITE		0.908					
GRADELEC		0.838					
ONLIN_RC		0.830		-0.486			
SAVETIME	0.403	0.738					0.469
TENURE		0.700			0.453	0.405	
INTHING	0.513	0.516	-0.420				
COMMSTNT			0.962				
EASYSTNT			0.924				
RCH_STNT			0.787	0.475			
BETR_TCH			-0.782			-0.520	
Scl_mony		0.407	0.671	0.518			
STNTLIKE			0.598		0.472		0.486
COM_ADVG				0.978			
COL_RCRT				0.953			
COL_SURV				0.836			
PAY				0.920			
STNTCOMP			0.45		0.874		
OTR_INST		0.445			0.828		
OWN_TIME						-0.933	
SUPVISOR			-0.444		0.48	-0.738	
CHNG_JOB			0.499			0.599	
RESEARCH			-0.45				-0.754
FREE_ISP	0.429					0.414	0.590

[a] Rotation converged in 22 iterations.

[b] Only cases for which AGE_2 = 6 are used in the analysis phase.

(GRADELEC), on-line grading and record keeping (ONLIN_RC), and Internet teaching will save time (SAVETIME). Other variables are: tenure (TENURE), distance learning/education is the in thing (INTHING), being afraid technology will pass me by (TECHPASS), other instructors are doing it (OTR_INST), and saving the school money (SCL_MONY). It accounted for 19.34% of the variance explained.

Eleven variables were found in component three. They were: the inverse of distance learning/ education is the in thing (INTHING), instructors can communicate with their students more easily (COMMSTNT), it is easy for students to use (EASYSTNT), reaching students (RCH_STNT), the inverse of better teaching assignments (BETR_TCH), saving the school money (SCL_MONY). It also includes: students like it (STNTLIKE), the constantly changing nature of the job (CHNG_JOB), many students are more at ease with a computer than an instructor (STNTCOMP), research material for publications (RESEARCH), and the inverse of my supervisor requested or ordered me to do it (SUPVISOR). Component three accounted for 17.04% of the variance explained.

Seven variables existed in component four: competitive advantage or improving the image of the school (COM_ADVG), college recruitment and retaining students (COL_RCRT), college survival (COL_SURV), saving the school money (SCL_MONY), the inverse of on-line grading and record keeping (ONLIN_RC), reaching students (RCH_STNT), and being afraid technology will pass me by (TECHPASS). Component four accounted for 15.17% of the explained variance.

Component five had seven variables. The variables were: pay (PAY), many students are more at ease with a computer than an instructor (STNTCOMP), other instructors are doing it (OTR_INST), gaining more knowledge of technology (KNOWTECH), my supervisor requested or ordered me to do it (SUPVISOR), students like it (STNTLIKE), and tenure (TENURE). This component accounted for 12.77% of the explained variance.

Component six was made up of six variables. They include: The inverse of working on the instructors own time and in their own space (OWNTIME), my supervisor requested or ordered me to do it (SUPVISOR), the constantly changing nature of the job

Fifty-Five and Over. Twenty four of those who responded to the survey were in the 55 and over range. There were seven factors computed. Overall, the this group accounted for 94.62% of the explained variance. Table 17 contains the Rotated Component Matrix for these instructors.

Twelve variables were located in component one: college recruitment and retaining students (COL_RCRT), reaching students (RCH_STNT), competitive advantage or improving the image of the school (COM_ADVG), the constantly changing nature of the job (CHNG_JOB), college survival (COL_SURV), and students like it (STNTLIKE). Additional variables include: instructors do not need to meet with students face to face as

Table 17

Rotated Component Matrix-Ages Fifty-Five and Over [a, b]

	Component						
	1	2	3	4	5	6	7
COL_RCRT	0.899						
RCH_STNT	0.896						
COM_ADVG	0.895						
CHNG_JOB	0.835						
COL_SURV	0.744			0.488			
STNTLIKE	0.742						
STNFACE	0.709				0.517	0.419	
KNOWTECH		0.936					
TECHCHAL		0.885					
PAY	-0.861						
BOOKSITE		-0.778					
COMMSTNT			0.838				
OWN_TIME			0.830				
STNTCOMP			0.826				
TECHPASS			0.822				
SAVETIME			0.630		0.579		
GRADELEC				0.849			
LOVECOMP		0.484		-0.801			
BETR_TCH				0.757			
OTR_INST	0.467			0.648			
TENURE	0.418	0.419		0.536	-0.454		
RESEARCH					-0.835		
EASYSTNT	0.482				0.827		
KNOWSUB					0.764		-0.447
FREE_ISP					0.49	0.761	
INTHING	0.576					0.730	
SUPVISOR					0.46	0.717	
ONLIN_RC		-0.447				0.673	
CUR_SKIL						0.458	
SCL_MONY	0.435						0.863
BOOKPART		-0.450	-0.473				-0.648

[a] Rotation converged in 13 iterations.

[b] Only cases for which AGE_2 =7 are used in the analysis phase.

often (STNFACE), distance learning/education is the in thing (INTHING), it is easy for students to use (EASYSTNT), other instructors are doing it (OTR_INST), saving the

school money (SCL_MONY), and tenure (TENURE). It accounted for 22.54% of the explained variance.

Component two contained eight variables: gaining more knowledge of technology (KNOWTECH), the challenge of learning and using new technology (TECHCHAL), the inverse of pay (PAY), and a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE). Other variables are: loving computers (LOVECOMP), the inverse of textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), the inverse of on-line grading and record keeping (ONLIN_RC), and tenure (TENURE). It accounted for 14.92% of the variance explained.

Six variables were found in component three. They were: the inverse of communicate with their students more easily (COMMSTNT), working on the instructors own time and in their own space (OWNTIME), many students are more at ease with a computer than an instructor (STNTCOMP), being afraid technology will pass me by (TECHPASS), Internet teaching will save time (SAVETIME), and the inverse of textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART). Component three accounted for 14.87% of the variance explained.

Six variables existed in component four: grade assignments submitted electronically (GRADELEC), the inverse of loving computers (LOVECOMP), better teaching assignments (BETR_TCH), other instructors are doing it (OTR_INST), and

tenure (TENURE), and college survival (COL_SURV). Component four accounted for 12.37% of the explained variance.

Component five had eight variables. The variables were: the inverse of research material for publications (RESEARCH), it is easy for students to use (EASYSTNT), learning more knowledge more knowledge of a particular subject (KNOWSUB), and Internet teaching will save time (SAVETIME). Other variables include: instructors do not need to meet with students face to face as often (STNFACE), free or low-cost personal Internet Service (FREE_ ISP), my supervisor requested or ordered me to do it (SUPVISOR), and the inverse of tenure (TENURE). This component accounted for 9.97% of the explained variance.

Component six was made up of six variables. They include: working on the instructors own time and in their own space (OWNTIME), free or low-cost personal Internet Service (FREE_ ISP), my supervisor requested or ordered me to do it (SUPVISOR), on-line grading and record keeping (ONLIN_RC), keeping computer/ Internet skills current (CUR_SKIL) and instructors do not need to meet with students face to face as often (STNFACE),.It accounted for 12.27% of the explained variance.

Three variables were found in component seven: saving the school money (SCL_MONY), the inverse of textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), and the inverse of learning more knowledge more knowledge of a particular subject (KNOWSUB). It accounted for 7.39% of the variance explained.

Teaching Experience

The final area to review based on the fourth research question was the question about teaching experience. There was a wide variety of responses, ranging from less than one year experience to 35 years experience. There were not enough responses from any one year to run a factor analysis. Therefore, the responses were gathered into groups based on the length of teaching service. The groups use the following ranges: 0-9, 10-19, 20-29, and over 30.

Teaching Zero to Nine Years. Twenty-eight of those who responded to the survey had from zero to nine years teaching experience. There were seven factors computed. Overall, the this group accounted for 96.88% of the explained variance. Table 18 contains the Rotated Component Matrix for these instructors. Fourteen variables were located in component one: college recruitment and retaining students (COL_RCRT), communicate with their students more easily (COMMSTNT), students like it (STNTLIKE), it is easy for students to use (EASYSTNT), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART),

Table 18

Rotated Component Matrix-Zero to Nine Years Teaching Experience [a, b]

Variables	1	2	3	4	5	6	7
COL_RCRT	.895						
COMMSTNT	.859						
STNTLIKE	.857						

EASYSTNT	.856						
BOOKPART	.852						
RCH_STNT	.807	.895					
STNFACE	.709	.859					
COM_ADVG	.635	.857					
STNTCOMP	.605	.856					
TECHCHAL		.852					
KNOWTECH		.807					
LOVECOMP		.709				-.426	
KNOWSUB		.635		.577			
CHNG_JOB	.470	.605	-.413				
BOOKSITE			.968				
PAY		.905					
CUR_SKIL			.762				.445
COL_SURV	.476	.470	.667				
TECHPASS		.420	.629		.594		
SUPVISOR				.926			
BETR_TCH				.795			
GRADELEC			.438	.772			
RESEARCH				.724			
INTHING	.505			.648			
TENURE	.548			.592			
FREE_ISP					.884		
OWN_TIME		.435				.858	
SAVETIME				.639		.656	
SCL_MONY	.461		.409			-.536	
OTR_INST							.890

[a] Rotation converged in 10 iterations.

[b] Only cases for which LONG_TEACH = 1 are used in the analysis phase.

reaching students (RCH_STNT), and instructors do not need to meet with students face to face as often (STNFACE). Additional variables include: competitive advantage or improving the image of the school (COM_ADVG), many students are more at ease with a computer than an instructor (STNTCOMP), tenure (TENURE), distance learning/education is the in thing (INTHING), college survival (COL_SURV), the

constantly changing nature of the job (CHNG_JOB), and saving the school money (SCL_MONY). It accounted for 23.85% of the explained variance.

Component two contained nine variables: the challenge of learning and using new technology (TECHCHAL), gaining more knowledge of technology (KNOWTECH), loving computers (LOVECOMP), learning more knowledge more knowledge of a particular subject (KNOWSUB), and the constantly changing nature of the job (CHNG_JOB), Other variables are: keeping computer/ Internet skills current (CUR_SKIL), working on the instructors own time and in their own space (OWNTIME), being afraid technology will pass me by (TECHPASS), many students are more at ease with a computer than an instructor (STNTCOMP). It accounted for 17.76% of the variance explained.

Nine variables were found in component three. They were: a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), pay (PAY), on-line grading and record keeping (ONLIN_RC), keeping computer/ Internet skills current (CUR_SKIL), and college survival (COL_SURV). Additional variables include: being afraid technology will pass me by (TECHPASS), competitive advantage or improving the image of the school (COM_ADVG), grade assignments submitted electronically (GRADELEC), and saving the school money (SCL_MONY). Component three accounted for 17.72% of the variance explained.

Seven variables existed in component four: my supervisor requested or ordered me to do it (SUPVISOR), better teaching assignments (BETR_TCH), grade assignments

submitted electronically (GRADELEC), research material for publications (RESEARCH), distance learning/education is the in thing (INTHING), tenure (TENURE), and Internet teaching will save time (SAVETIME). Component four accounted for 15.24% of the explained variance.

Component five had three variables. The variables were: free or low-cost personal Internet Service (FREE_ ISP), being afraid technology will pass me by (TECHPASS), and the inverse of instructors do not need to meet with students face to face as often (STNFACE). This component accounted for 7.9768of the explained variance.

Component six was made up of four variables. They include: working on the instructors own time and in their own space (OWNTIME), Internet teaching will save time (SAVETIME), saving the school money (SCL_MONY), and learning more knowledge more knowledge of a particular subject (KNOWSUB). It accounted for 7.74% of the explained variance.

One variable was found in component seven: other instructors are doing it (OTR_INST). This variable accounted for 6.54% of the variance explained.

Teaching Ten to Nineteen Years. Forty-three of those who responded to the survey had from ten to nineteen years teaching experience. There were seven factors computed. Overall, the this group accounted for 82.34% of the explained variance. Table 19 contains the Rotated Component Matrix for these instructors.

Eight variables were located in component one: college recruitment and retaining students (COL_RCRT), competitive advantage or improving the image of the school

(COM_ADVG), college survival (COL_SURV), reaching students (RCH_STNT), the constantly changing nature of the job (CHNG_JOB), working on the instructors own time and in their own space (OWNTIME), students like it (STNTLIKE), and it is easy for students to use (EASYSTNT). It accounted for 16.59% of the explained variance.

Component two contained seven variables: other instructors are doing it (OTR_INST), research material for publications (RESEARCH), better teaching assignments (BETR_TCH), tenure (TENURE), saving the school money (SCL_MONY), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), and working on the instructors own time and in their own space (OWNTIME). It accounted for 14.41% of the variance explained.

Six variables were found in component three. They were: the challenge of learning and using new technology (TECHCHAL), learning more knowledge more knowledge of

Table 19

Rotated Component Matrix-Ten to Nineteen Years Teaching Experience [a, b]

	Component							
	1	2	3	4	5	6	7	8
COL_RCRT	0.918							
COM_ADVG	0.832							
COL_SURV	0.828							
RCH_STNT	0.815							
CHNG_JOB	0.767							
OWN_TIME	0.472	0.412						
OTR_INST		0.807						
RESEARCH		0.806						
BETR_TCH		0.731						
TENURE		0.660						
Scl_mony		0.654						
BOOKSITE		0.651			0.518			0.405
TECHCHAL			0.928					
KNOWSUB			0.826					
KNOWTECH			0.791					
LOVECOMP			0.767					
CUR_SKIL			0.759					
STNTCOMP				0.721				
STNFACE				0.631		0.558		
SAVETIME			0.415	0.621				
STNTLIKE	0.565			0.616				
COMMSTNT				0.581			-0.483	
EASYSTNT	0.500			0.501				
GRADELEC					0.855			
BOOKPART					0.669			
ONLIN_RC					0.599			
FREE_ISP						0.757		
INTHING						0.735		
SUPVISOR							0.855	
PAY					-0.458	0.559		
TECHPASS								0.797

[a] Rotation converged in 43 iterations.

[b] Only cases for which LONG_TEACH = 2 are used in the analysis phase.

a particular subject (KNOWSUB), gaining more knowledge of technology (KNOWTECH), loving computers (LOVECOMP), keeping computer/ Internet skills current (CUR_SKIL), and Internet teaching will save time (SAVETIME). Component three accounted for 14.305% of the explained variance.

Six variables existed in component four: many students are more at ease with a computer than an instructor (STNTCOMP), instructors do not need to meet with students face to face as often (STNFACE), Internet teaching will save time (SAVETIME), students like it (STNTLIKE), communicate with their students more easily (COMMSTNT), and it is easy for students to use (EASYSTNT). Component four accounted for 9.60% of the explained variance.

Component five had four variables. The variables were: grade assignments submitted electronically (GRADELEC), the textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), on-line grading and record keeping (ONLIN_RC), and a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE). This component accounted for 8.59% of the explained variance.

Component six was made up of four variables. They include: free or low-cost personal Internet Service (FREE_ ISP), distance learning/education is the in thing (INTHING), the inverse of pay (PAY), and instructors do not need to meet with students face to face as often (STNFACE). It accounted for 12.29% of the explained variance.

Three variables were found in component seven: my supervisor requested or ordered me to do it (SUPVISOR), pay (PAY), and the inverse of communicate with their students more easily (COMMSTNT). This component accounted for 6.46% of the variance explained.

Component eight had two components: being afraid technology will pass me by (TECHPASS), and a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE). It accounted for 6.06% of the explained variance.

Teaching Twenty Years or More. Twenty-nine of those who responded to the survey had from twenty or more years teaching experience. There were seven factors computed. Overall, the this group accounted for 97.90% of the explained variance. Table 20 contains the Rotated Component Matrix for these instructors.

Nine variables were located in component one: challenge of learning and using new technology (TECHCHAL), Internet teaching will save time (SAVETIME), tenure (TENURE), saving the school money (SCL_MONY), better teaching assignments (BETR_TCH), grade assignments submitted electronically (GRADELEC), gaining more knowledge of technology (KNOWTECH), keeping computer/Internet skills current (CUR_SKIL), and college recruitment and retaining students (COL_RCRT). It accounted for 18.75% of the explained variance.

Table 20

Rotated Component Matrix-Twenty Years or More Teaching Experience [a, b]

	Component							
	1	2	3	4	5	6	7	8
TECHCHAL	0.923							
SAVETIME	0.802		0.491					
TENURE	0.799							
SCL_MONY	0.795							
BETR_TCH	0.752							
GRADELEC	0.750	0.413						
KNOWTECH	0.73					-0.534		
STNTCOMP		-0.847						
LOVECOMP		0.798				-0.468		
ONLIN_RC		0.767						
CUR_SKIL	0.441	0.728						
BOOKSITE		0.679			-0.544			
BOOKPART		0.665			-0.596			
EASYSTNT			0.886					
STNFACE			0.802					
STNTLIKE			0.766					
FREE_ISP		0.428	0.712	0.407				
SUPVISOR			0.699					
KNOWSUB		0.426	0.669					
TECHPASS				0.922				
INTHING			0.417	0.871				
COM_ADVG				0.863				
COL_RCRT	0.415			0.742				-0.465
OWN_TIME					0.925			
COMMSTNT					0.794			
OTR_INST						0.832	0.452	
COL_SURV				0.420		0.829		
PAY						0.877		
RESEARCH							0.854	
CHNG_JOB								0.864
RCH_STNT								-0.735

[a] Rotation converged in 16 iterations.

[b] Only cases for which LONG_TEACH = 3 are used in the analysis phase.

Component two contained nine variables: many students are more at ease with a computer than an instructor (STNTCOMP),loving computers (LOVECOMP), on-line grading and record keeping (ONLIN_RC), keeping computer/Internet skills current (CUR_SKIL), a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE), textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), free or low-cost personal Internet Service (FREE_ ISP), learning more knowledge more knowledge of a particular subject (KNOWSUB), and grade assignments submitted electronically (GRADELEC). It accounted for 8.93% of the variance explained.

Eight variables were found in component three. They are: it is easy for students to use (EASYSTNT), and instructors do not need to meet with students face to face as often (STNFACE), students like it (STNTLIKE), free or low-cost personal Internet Service (FREE_ ISP), my supervisor requested or ordered me to do it (SUPVISOR), learning more knowledge of a particular subject (KNOWSUB), Internet teaching will save time (SAVETIME), and distance learning/education is the in thing (INTHING). Component three accounted for 14.74% of the variance explained.

Six variables existed in component four: afraid technology will pass me by (TECHPASS), distance learning/education is the in thing (INTHING), competitive advantage or improving the image of the school (COM_ADVG), college recruitment and retaining students (COL_RCRT), college survival (COL_SURV), and free or low-cost

personal Internet Service (FREE_ ISP). Component four accounted for 9.41 % of the explained variance.

Component five had four variables. The variables were: working on the instructors own time and in their own space (OWNTIME), instructors can communicate with their students more easily (COMMSTNT), the inverse of textbook has a partnership with WebCT, Lotus Learning Space or other company which provides independent Internet course (BOOKPART), and the inverse a textbook publisher either hosted the Web site or provided Web site course support at their Web site (BOOKSITE). This component accounted for 11.45% of the explained variance.

Component six was made up of four variables: instructors are doing it (OTR_INST), college survival (COL_SURV), the inverse of gaining more knowledge of technology (KNOWTECH), and the inverse of loving computers (LOVECOMP). It accounted for 9.79% of the explained variance.

Three variables were found in component seven: pay (PAY), research material for publications (RESEARCH), and instructors are doing it (OTR_INST). It accounted for 8.38% of the variance explained.

Component eight had three components: the constantly changing nature of the job (CHNG_JOB), the inverse of reaching students (RCH_STNT), and the inverse of college recruitment and retaining students (COL_RCRT). It accounted for 6.06% of the variance explained.

Nineteen different factor analyses were run to create the tables and information listed in this chapter. Most are useful. The most important of the findings are summarized in Chapter 5.

CHAPTER 5

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This research was accomplished to find out why community college instructors were teaching over the Internet. There is a lack of literature about the motivation of instructors who do this. By understanding why these instructors use this mode of instruction, colleges can recruit more instructors to teach over the web. This research attempted to answer the following questions:

1. Why do faculty design or teach internet-based courses?
2. Is there a set of factors that motivate instructors to teach over the Internet?
3. Is there a difference in motivation for those who design their own courses as compared to those who use pre-existing software?
4. Does the distribution of these factors vary for subgroups of the population sampled by gender, teaching field, terminal degree, age, or teaching experience?

This information will help administrators make decisions about adding further online courses and attracting more instructors into teaching online.

Summary

By understanding why these instructors teach over the Internet, colleges can recruit more instructors to teach using the web thus allowing colleges to offer more Internet courses. They can also use the information to keep the instructors who are currently teaching over the Internet satisfied, and motivate them to continue to teach. A third reason for this research is to determine who the Internet instructors are. There is a need to examine who the instructors are and what makes the difference (if any) in their motivation for teaching over the Internet.

To gather this information, a questionnaire was created and evaluated for reliability and validity during a pilot study. It was then sent to those instructors who taught over the Internet, and had their e-mails available on their campus Web site. A 30.5% response rate (n=100) was achieved. The survey was divided into two sections, a demographics section and a Likert scale with 31 statements dealing with motivation. Each statement had a choice of six possible answers ranging from *strongly agree* to *strongly disagree*, plus a not applicable choice.

The demographic data were reported and summarized. The Likert items were examined using factor analysis techniques, and a number of components were discovered. Next, the responses were broken into subgroups and a factor analysis was repeated to compare the groups with each other and with the main group. The subgroups included gender, teaching field, terminal degree, age, teaching experience and whether or not an instructor created their own course content.

Eight components, made up of the 31 variables from the Likert scale were found using the factor analysis. The eight components in order are labeled: Technical and Computer Challenges, School Promotion, Student Preferences, Personal Benefits, Receiving Computerized Assistance, Growth and Knowledge, and Textbook Company Assistance. Pay was the only variable in Factor 8, the least influential component.

Based on the study performed, the primary reason teachers teach over the Internet is that they are interested in the technical skills required to do so. After that they do it to support the school and the students. Interest in recruiting new students and ease of student use were very important. Only on the fourth factor of eight did the instructors as a whole report an interest in research, tenure, and pay.

The first factor of the overall factor analysis holds up in several subgroups. This factor is Technical and Computer Challenges. School Promotion, Student Preferences, and Personal Benefits are the next three factors. These three factors are the first three in the following subgroups: Instructor Designs their own course content, Gender Females, and Department Vocational/ Technical. However, they are not always in the same order.

The subjects who earned master s degrees also reported the factors Technical and Computer Challenges, and School Concerns as the first two factors. However, they are in reverse order from the overall group, with school concerns as the first factor. The component Technical and Computer Challenges becomes the second factor.

Surprisingly, women reported Technical and Computer Challenges as their first factor with Personal Benefits as their second. Men responded differently. The factor that

men reported as most important was School Promotion, followed by Teaching Effectively and Efficiently, especially in terms of communication with students.

Instructors teaching in Business, Computer Information Technology, and Health/Human Services, all reported that what motivated them most was Technical and Computer Challenges, but the second motivational factor was different for each. Business instructors were more interested in Teaching Effectively and Efficiently. Computer/Information Technology instructors are motivated by more personal interests, and Health/Human Services were more interested in School Promotion.

Conclusions

One of the purposes of this research was to improve instructor recruiting and retention. This would help two-year colleges recruit and retain students which was one of the reasons the instructors gave for teaching over the internet. However, the primary motivation for these instructors was the area of Technical and Computer Challenges. Six variables were located in the first component:

(TECHCHAL) challenge of learning and using new technology

(LOVECOMP) loving computers

(KNOWTECH) gain more knowledge of technology

(KNOWSUB) learn more knowledge of a particular subject

(CUR_SKIL) keeping computer/Internet skills current

(OWNTIME) working on the instructors own time and in their own space.

In order to motivate these instructors, two year colleges need to be willing to spend the funds necessary to provide for training about the technology used in Internet based courses. The instructors who teach over the web are interested in technical challenges (TECHCHAL), and learning more about technology (KNOWTECH). Providing an opportunity to learn about the newest technology will keep instructors from getting bored with the classes.

These colleges and post-secondary schools need to spend money to provide the best equipment possible for these instructors. They love computers (LOVECOMP). It would allow them to explore new, cutting edge methods for teaching with technology. They would not be limited by obsolete technology.

Another area that needs administrative assistance is the area of instructors learning more about their individual subject matter (KNOWSUB). Providing faculty development funds for education and training in the instructor s subject matter is necessary to ensure retention of the faculty teaching the web courses.

Finally, in response to Factor 2, School Promotion, it is important to ensure that these instructors are recognized, either publicly or privately, for their contribution to advancing the success of their school. In addition, recognize their contribution in assisting in their student s successes. This is a very inexpensive way to assure that these instructors are motivated to keep teaching these classes, and helps satisfies their interest in Student Preferences.

Recommendations

Recommendations For Future Research

This study should be repeated in a multi-state region to determine if the trends can be generalized to a larger population. This would allow a larger sample to be gathered.

Another area to compare is the relationships or differences between vocational areas as examined here, and the pure academic areas, English, Mathematics, History, and the hard sciences. This could determine whether the primary factor of Technical and Computer Challenges applies only to technical instructors, or if it is also the primary factor when the instructors teach purely academic courses.

In addition to using the questionnaire on a broader scale, another area to examine is four-year colleges. This would allow a comparison between two year post-secondary schools and four year colleges to determine if the results of this study apply to schools which have four year programs. Schools of business, nursing schools, other medical areas, and criminal justice are just a few of the programs which could be examined in this manner.

Questionnaire

The research question, Why do faculty design or teach their Internet-based courses? is actually is two questions about two different concepts. It should be reworded so that they read Why do faculty design their Internet-based courses? and Why do faculty teach Internet-based courses?.

The question about whether courses were designed by the instructors could be improved. It should be rewritten to differentiate between creating course content and creating the delivery method for the course. As the question is currently written, it could be confusing. Reversing the order of the two questions so that the question about prepackaged platforms comes before the question about designing the course content will prevent confusion about what the question is actually asking.

The question about age should be revised to provide fewer groups. During this research, several of the groups had to be combined so that there were enough subjects in each group to run the tests. For example, 21-24 and 25-29 could be combined to produce 21-30. Larger data sets could be created combining three or four existing choices.

Teaching experience should be grouped into ranges as well. It is recommended that experiences be set in ten year increments. This will allow data to be tested consistently across different populations.

Another question to add to the questionnaire is whether the instructor is in residence at the college where the on-line teaching is done. Instructors could conceivably be anywhere in the world and teach on-line.

Geographic location is an area to research as well. Do schools who are near each other respond the same way, and are they different from schools in other regions? Or, are the responses consistent throughout the state?

A final area to look at is whether there is a relationship between offering the course on-line and meeting the needs of business and industry. Do the courses on-line

provide the skills required in the job market? Are they adequate to providing physical skills?

APPENDIX A
LIST OF COMMUNITY COLLEGES IN TEXAS

LIST OF COMMUNITY COLLEGES IN TEXAS

Alamo Community College District

- Northwest Vista College
- Palo Alto College
- St. Philip's College
- San Antonio College

Alvin Community College

Amarillo College

Angelina College

Art Institute of Houston

Austin Community College

Blinn College

Brazosport College

Central Texas College

Cisco Junior College

Clarendon College

Coastal Bend College

College of the Mainland

Collin County Community College

Dallas County Community College District

- Brookhaven College
- Cedar Valley College
- Eastfield College
- El Centro College
- Mountain View College
- North Lake College
- Richland College

Del Mar College

El Paso Community College

Frank Phillips College

Galveston College

Grayson County College

Hill College

Houston Community College System

Howard College

- Southwest Collegiate Institute for the Deaf

Jacksonville College

Kilgore College

Lamar State College-Orange

Lamar State College-Port Arthur

Laredo Community College

Lee College

Lon Morris College

McLennan Community College

Midland College

Navarro College

North Central Texas College

North Harris Montgomery County Community College District

- Kingwood College

- Montgomery College
- North Harris College
- Tomball College

Northeast Texas Community College

Odessa College

Panola College

Paris Junior College

Ranger College

San Jacinto College District

South Plains College

South Texas Community College

Southwest Texas Junior College

Tarrant County College

Temple College

Texarkana College

Texas Southmost College *(allied with University of Texas-Brownsville)*

Texas State Technical College System

- □□ Harlingen campus
- □□ Marshall campus
- □□ Sweetwater campus
- □□ Waco campus

Trinity Valley Community College

Tyler Junior College

Vernon College

Victoria College

Weatherford College

Western Texas College

Wharton County Junior College

APPENDIX B
COMMUNITY COLLEGES USED IN THE PILOT STUDY

COMMUNITY COLLEGES USED IN PILOT STUDY

Austin Community College

Dallas County Community College District

- ÿÿ Brookhaven College

Galveston College

Laredo Community College

North Harris Montgomery County Community College District

- ÿÿ North Harris College

Southwest Texas Junior College

Trinity Valley Community College

APPENDIX C
INITIAL CONTACT E-MAIL

Dear Professor or Instructor,

I am a Doctoral Student at the University of North Texas. I am doing research about motivation for my dissertation. I am investigating why community college instructors teach courses over the Internet.

I found your name and e-mail address by looking at the distance education schedules on your campus web site.

Please take about 10 minutes to fill out my survey about motivation. All information you send me will be kept strictly confidential.

To take the survey please use the following link:

http://www.mwsu.edu/~swartwoutn/introduction_letter.htm

If the link does not work, please copy the link into the address line of your web browser

If you have any questions, please reply to this e-mail.

Thank you,

Nansi Swartwout
Assistant Professor
Business Computer Information Systems
Midwestern State University
3410 Taft Blvd
Wichita Falls, TX 76308-2099
(940) 397-4292
Fax (940) 397-4280

APPENDIX D

INTRODUCTION LETTER ON THE Web site

Motivations for Internet-Based Instruction

To the Educator:

This letter is an invitation to participate in a research study about faculty motivation. Participation is voluntary and that failure to participate carries no penalty of any kind. This questionnaire is designed to assess your perceptions of the motivations for Internet-based instruction. It should require about 15 minutes of your time. Usually it is best to respond with your first impression, without giving a question much thought.

Your answers will remain confidential. Email addresses will be used to track responses only. All information collected from the this survey will be compiled into a secured computer file. Individuals, e-mail addresses, or locations will not be described in the final report.

Through the use of your input, we hope to learn how to continue and improve motivation of community college instructors. In addition, the information can be used to recruit and retain effective new instructors.

This project has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940/565-3940)

Thank you for your cooperation!

Nansi A. Swartwout
Doctoral Candidate
University of North Texas
(940) 397-4292

nansi.swartwout@mwsu.edu

To continue the survey, click here!

If this link does not work copy the following URL into the address line.

http://www.mwsu.edu/~swartwoutn/InternetSurvey.htm

APPENDIX D
QUESTIONNAIRE

APPENDIX E

TYPES OF TRAINING RECEIVED

TYPES OF TRAINING RECEIVED

1. Self taught (10)
2. Military (3)
3. Computer savvy associates, tutors, friends
4. Work, in-service, in house faculty training, on-the-job training (as an instructor), workshops for certain Internet-based courses, on site training, On the Job (Industry), WebCT classes were given.
5. 1 was with IBM for 22 years.
6. IBM user training
7. Police officer
8. On-line training (2)
9. Fellowship
10. Continuing Ed classes, workshops for certain
11. NAEC
12. Professional training

APPENDIX F
METHODS FOR CREATING DELIVERY PLATFORMS

METHODS FOR CREATING DELIVERY PLATFORMS

1. Design own, I use WebCT to deliver the material but I created the course material (5)
2. Dreamweaver
3. a faculty colleague shared 2 course templates with me and I have made major changes (2)
4. A combination of designing own and using Textbook Publisher Created Web site.
5. I use part of WebCT plus Composer & Word
6. Cyber-Class
7. My own template (3)
8. Blackboard (2)
9. Microsoft FrontPage
10. Designed my own course originally, then the college required all courses to be taught in WebCT. (2)
11. Book comes with the program on CD.
12. I have done both (prepackaged and design your own).

REFERENCE

Anonymous, (2001). Virtual school offers complete online education. *Technical Horizons in Education (T.H.E. Journal), 28* (10), 31. Retrieved October 31, 2001, from Electric Library database.

Author not available, (2001, October 3). Interest in e-learning, especially live option increases in the wake of terrorist attacks. *Lifelong Learning Market Report.* Retrieved October 31, 2001, from Electric Library database.

Balch, D. E., & Patino, I. F. (1997, March). Learning online: a 20th century zen experience. *Paper presented at Annual Meeting of the Academy of Criminal Justice Sciences, Louisville, KY,* 1-11.

Barnard, J. (1997). The World Wide Web and higher education: The promise of virtual universities and online libraries. *Educational Technology, 37* (3), 30-35.

Bellott, F. K. & Tutor, F. D. (1990). A challenge to the conventional wisdom of Herzberg and Maslow theories. Paper presented at the 19th annual meeting of the Mid-south Educational Research Association. New Orleans, LA: 1-16. (ERIC Document Reproduction Service No. ED 326 563.)

Berge, Z. (1999). Interaction in post-secondary Web-based learning. *Educational Technology, 39* (1), 5-11.

Borkowski, E. Y., Henry, D., Larsen, L. L., & Mateik, D. (1996). Supporting teaching and learning via the Web: Transforming hard-copy linear mindsets into web-flexible creative thinking. [On-Line] WebNet 96 (p.65) San Francisco, CA October 1996. Available: http://aace.virginia.edu/aace/conf/webnet/html/304.htm.

Bowman, J. P. The third wave: Swimming against the tide. *Business Communication Quarterly, 64* (2) 87-91.

Brooks, D. W. *Web-teaching: A guide to designing interactive teaching for the World WideWeb*. New, NY: Plenum Press.

Brown, K. (2001, August, 31). Online, on campus: Proceed with caution. *Science.* Retrieved October 31, 2001 from Electric Library

Campbell, H. (1996). A social interactionist perspective on computer implementation. *Journal of the American Planning Association, 62,* 99-108.

Caudron, S. (2002). Training in the post terrorism era [Electronic version], Training & Development, 56 (2) 24-29.

Chalofsky, N. & Larson-Daugherty, C. A. (1996)Academic programs for HRD professionals. In R. L. Craig (Ed.), *The ASTD Training and Development Handbook: A Guide to Human Resource Development (4th ed.)* (Pp. 990-1007). New York, NY: McGraw-Hill.

Cheser, R. N. (1998). The effect of Japanese Kaisen on employee motivation in U. S. Manufacturing. *The International Journal of Organizational Analysis, 6* (3), 197-217.

Chute, A. G., Sayers, P. K. & Gardner, R. G. (1997). Networked learning environments. *New Directions for Teaching and Learning, 71*, 75-83.

Crumpacker, N. (2001). Faculty pedagogical approach, skill, and motivation in today s distance education Milieu. *Online Journal of Distance Learning Administration, 4* (4). Retrieved June 18, 2002, from http://westga.edu/~distance/ojdla/Winter44/ crumpacker44.html.

Cummings, A. & Oldham, G. R. (1997). Enhancing creativity: Managing work contexts for the high potential employee. *California Management Review, 40* (1), 22-38.

Day, D. L. (1991). The cross-cultural study of human computer interaction: A review of research methodology, technology transfer, and the diffusion of innovation. Paper presented at the National Conference on Librarians and International Development, (3rd, Corgallis, OR, April 30, 1991), (ERIC Document Reproduction Service No. ED 343 564.).

Diekhoff, G. (1992). *Statistics for the social and behavioral sciences: Univariate, bivariate, multivariate*. Dubuque, IA: William C. Brown Publishers.

Dillon, D. L. & Walsh, S. M. (1992). Faculty: The neglected resource in distance education. *The American Journal of Distance Education, 6* (3), 5-21.

Dirks, M. (1997). Problems, philosophy, and motivation: Trail blazing instructors for the digital frontier. *Journal of Educational Computing Research, 7* (1), 47-65.

Duncan, W. J. (1989). *Great ideas in management: Lessons from the founders and foundations of managerial practice.* San Francisco, CA: Jossey-Bass Inc., Publishers.

Easterday, N. (1997). Distance education and 2-year colleges. *Community College Journal of Research and Practice, 21,* 23-36.

Ellis, E. M. (2000). Faculty participation in the Pennsylvania State University World Campus: identifying barriers to success. *Open Learning 10*, (3), 233-242.

El-Tigi, M., & Branch, R. M. (1997). Designing for interaction, learner control, and feedback during Web-based learning. *Educational Technology, 37* (3), 23-29.

Farh, J. & Scott, Jr., W. E., (1983). Experimental effects of autonomy on performance and self-reports of satisfaction. *Organizational Behavior and Human Performance, 31,* 203-222.

Filipczak, B. (1996). Can t buy me love. *Training, 33* (1), 29.34.

Frase, L. E., Hetzel, R. W., & Grant, R. T. (1982). Promoting instructional excellence through a teacher reward system: Herzberg s theory applied. *Planning and Changing, 13* (2), 67-76.

Gall M. D., Borg, W. R., & Gall, J. P. (1996). *Educational Research: An Introduction* (6th ed.). White Plains: Longman

Gagne, R. M., Briggs, L. J., & Wager, W. W. (1992). *Principles of Instructional Design.* Ft. Worth, TX: Harcourt Brace College Publishers.

Galagan, P. A. (2001). Mission e-possible. *Training & Development, 22* (2), 46-56. Retrieved October 31, 2001, from the EBSCO database

Gravelle, D. (1997). Using a web site to facilitate the learning process: A college professors experience [On-line]. Available: http://leahi.kcc.hawaii.edu/org/tcc_conf97/pres/gravelle.html.

Griesser, J. W. (1993). Motivation and information system professionals. *Journal of Managerial Psychology, 8* (3), 21-30.

Hackman, J. R., & Oldham, G. R. (1976) Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance, 16,* 250-279.

Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *The motivation to work. (2nd ed.).* New York: John Wiley & Sons, Inc.

Herzbert, F. (1987). One more time: How do you motivate employees? *Harvard Business Review, 65* (5), 109-120.

Hinkle, D. H., Wiersma, W., & Jurs, S. G. (1994). *Applied statistics for the behavioral sciences.* Boston, MA: Houghton Mifflin Company.

Isaac, S. & Michael, W.B. (1995). *Handbook in research and evaluation: For education and the behavioral sciences. (3rd ed).* San Diego, CA: EdITS/Education and Industrial Testing Services.

Jacobsen, D. M. (1998). Adoption patterns of faculty who integrate computer technology for teaching and learning in higher education. ED-MEDIA/ED-TELECOM 98

World Conference on Educational Multimedia and Hypermedia & World Conference on Educational Telecommunications Proceedings, (10th, Freiburg, Germany, June 20-25, 1998) (ERIC Document Reproduction Service No. ED 428 675.)

Johnson, D. (2001, October 29). Next Frontiers, *Newsweek*, 54-60. Retrieved November 2, 2001, from http://archives1.newsbank.com/ar-search/we/archives .

Johnson, R. (1990). *Open learning: Policy and practice.* Commissioned report No. 4, Australian Government Publishing Services: Canberra. Found in: Marland, P. (1997). *Toward more effective open and distance teaching.* Kogan Page: Stirling, VA.

Johnson, R. A., & Wichern, D. W. (2002) *Applied Multivariate Statistical Analysis.* Upper Saddle River: Prentice Hall.

King, M. C., Koller, A., & Eskow, S. (1996). Worldwide community college links employees to training. *Personnel Journal, 75* (2), 32.

Kinne, T. (1998). Why we work. *Training, 35* (8), 34-39.

Klemm, W. R. (1998). Using computer conferencing in teaching. *Community College Journal of Research and Practice, 22,* 507-518.

Knight, P. J. & Westbrook, J. (1999). Comparing employees in traditional job structures vs telecommuting jobs using Herzberg s hygienes & motivators. *Engineering Management Journal - Emj., 11* (1), 15-20.

Knoop, R. (1994). Relieving stress through value-rich work. *Journal of Social Psychology, 134* (6) 829-836.

Kubala, T. (1998). Addressing student needs: Teaching on the internet. *T. H. E. Journal,* [on-line] *25,* (8), Available: http://www.thejournal.com/magazine/98/nov/1198feat1.html

Landriault, G., (2000, March 1). In class, online. *Computing Canada, 11.* Retrieved October 31, 2001, from Electric Library database.

Lee, J. (2001). Instructional Support for Distance Education and Faculty Motivation, Commitment, and Satisfaction. *British Journal of Educational Technology, 32* (2) 153-60.

Lehnert, W. G. (1998). *Internet 101: A beginners guide to the internet and the WWW.* Reading, MA: Addison Wesley.

Li H. (2002). Distance education: Pros, cons, and the future. *Proceedings of the Western States Communication Association.* (ERIC Document Reproduction Service No. ED461903)

Locatis, C. & Weisberg, M. Distributed learning and the internet. *Contemporary Education, 68* (2), 100-103.

Maher, M., Schooley, D. K., & Fry, P. (2001) Classroom financial analysis with electronic databases. *Journal of Education for Business, 76* (3) 144. Retrieved November 2, 2001, from Electric Library.

Mannheim, B., Baruch,Y., & Tal, J. (1997). Alternative models for antecedents and outcomes of work centrality and job satisfactions of high tech personnel. *Human Relations, 50* 12, 1537-1562.

Marchese, M. C. (1998). Some factors affecting the relationship between job characteristics and job worth: A job-role interpretation. *International Journal of Organizational Analysis, 6* (4), 355-369.

Marland, P. (1997). *Toward more effective open and distance teaching.* Stirling, VA: Kogan.

McCormick, J. (2000, April 24) The new school. *Newsweek, 60.* Retrieved November 2, 2001, from http://archives1.newsbank.com/ar-search/we/archives . . .

McGinn, D. (2000, April 24) College Online. *Newsweek,* 54. November 2, 2001, from http://archives1.newsbank.com/ar-search/we/archives . . .

McManus, T. F. (1996). *Delivering Instruction on the World WideWeb.* [on-line], Available: http://csuhayward.edu/ics/htmls/Inst.html

Medved, J. (1982). The applicability of Herzberg s motivation-hygiene theory. *Educational Leadership, 39* (7), 555.

Mellow, G. O. Sokenu, J. & Lynch-Donohue, B. (1998). Integrating technology into the classroom: Exploring what it means for faculty and students. *Community College Journal, 6* (1), 24-30.

Melvin, J. (1993). Design and creation of job satisfaction. *Facilities, 11* (4), 15-18.

Mertler, C. A. & Vannatta, R. A. (2001). Advanced and multivariate statistical methods: Practical application and interpretation. Pyrczac: Los Angeles.

Morabito, M. G. (1997). *Foundations of Distance Education*. 2-21. (ERIC Document Reproduction Service No. ED 412 357.)

Moore, M. G., & Kearlsey, G. (1996). *Distance education: A systems view.* Boston, MA: Wadsworth Publishing Company.

Paine, N. (1996). The role of the community college journal in the age of the Internet. *Community College Journal*, 67(1), 33-37.

Paulsen, M. F. (1995).The online report on pedagogical techniques for computer mediated communication. [Online] Available: http://www/hs.nki.no/~morten/cmcped.htm

Pecotich, A. & Churchill, G. A., Jr. (1981). An examination of the anticipated satisfaction importance valence controversy. *Organizational Behavior and Human Performance, 27,* 210-215.

Peek, R. (2000), A distance learning reality check. *Information Today, 17* (2) 30. Retrieved October 31,2001, from Electric Library database.

Pitt, T. J. & Clark, A. (1997). Creating powerful online courses using multiple instructional strategies. *Trends and Issues in Online Instruction.* Teaching in the Community Colleges Online Conference: Kapiolani Community College, 2, [on-line]. Available: http://leahi.kcc.hawaii.edu/org/tcc_conf97 /pres/pitt.html

Polyson, S., Saltzberg, S., & Godwin-Jones, R. (1996, September). A practical guide to teaching with the World WideWeb. *Syllabus, 8,* 13-16.

Quick, D. & Davies, T. G. (1999). Community college faculty development: Bringing technology to instruction. *Community College Journal of Research and Practice, 23* 641-653.

Roblyer, M. D., Edwards, J., & Havriluk, M. A. (1997). *Integrating educational technology into teaching.* Upper Saddle River, NJ: Prentice Hall.

Randall, B., Bishop, J., Johnson, M., Shearin, E., Godley, P., & Caudle, K. (1996). A marketing approach to distance education technology: A statewide survey. *Community College Review, 23* (4), 15-32.

Rogers, E. M. (1995). *Diffusion of technology.* (4th ed.). New York: The Free Press.

Sawyer, J. M. (1997). Interweaving face-to-face student contact with an online class presentation format. *Trends and Issues in Online Instruction.* Teaching in the Community Colleges Online Conference: Kapiolani Community College, 2, 1-6. (ERIC Document Reproduction Service No. ED 413 893.)

Schlifter, C. C. (2001). Faculty motivators and inhibitors for participation in distance education. *Educational Technology, 40* (4), 43-46.

Shea, T., Motiwalla, L., & Lewis. D. (2001) Internet-based distance education the administrator s perspective. *Journal of Education for Business, 77* (2), 112-117.

Sherry, L. Y. (1997). The Boulder Valley Internet project: Lessons learned. *Technical Horizons in Education (T. H. E.) Journal, 25* (2), 68-72.

Spencer, M. G. et al. (1989). Faculty satisfaction and motivation: How faculty perceive themselves in the institutional environment. Paper presented at the Annual meeting of the Association for the Study of Higher Education, Atlanta, Ga.: November 2-5, 1989. (ERIC Document Reproduction Service No. ED 313 958.)

SPSS for Windows, Rel. 10.0.1. 1999. Chicago: SPSS Inc.

Starr, R. M. (1997), Delivering instruction on the World Wide Web: Overview and basic design principles. *Educational Technology, 37* (3), 7-14.

Sternberg, R. J. (1997). Creativity as an investment. *California Management Review, 40* (1), 8-21.

Svetcov, D. (2000, September 11). The virtual classroom vs. the real one. *Forbes: Best of the Web Reviews.* Retrieved November 2, 2001 from http://www.forbes.com/best/2000/911/050.html.

Sylvia, R. D. & Hutchison, T. (1985). What makes Ms. Johnson teach? A study of teacher motivation. *Human Relations, 38* (9), 841-856.

Texas Higher Education Coordinating Board. (2001). *Report on a Study of Access to Higher Education through Distance Education* (Austin, Texas, August 7, 2000). (ERIC Document Reproduction Service No. ED453811)

Tyrer, P. De-centering the classroom through online technologies: The creation of a cybercity, a case study. *Trends and Issues in Online Instruction.* Teaching in the Community Colleges Online Conference: Kapiolani Community College, 2, [on-line]. Available: http://leahi.kcc.hawaii.edu/org/tcc_conf97 /pres/tyrer.html

Vroom, V. H. (1967). *Methods of Organizational Research.* New York: John Wiley & Sons, Inc.

What is ALN? (1999). [on-line]. Available: http://www.aln.org/alnweb/aln.htm

Wolcott, L. L. (1997). Tenure, promotion, and distance education: Examining the culture of faculty Rewards. *The American Journal of Distance Education, 11* (2),

Wolcott, L. L. (1998). Faculty issues pertaining to institutional Support and reward practices in distance education. Paper presented at the annual meeting of the American Educational Research Association, San Diego, Ca.: April 13-17, 1998. (ERIC Document Reproduction Service No. ED 419 530.)

Wren, D. A. (1987). *The Evolution of Management Thought.* (3rd ed.). New York: John Wiley & Sons, Inc.

Wright, M. & Custer, R. (1998). Why they enjoy teaching: The motivation of outstanding technology teachers. *Journal of Technology Education, 9* (2), 60-77.